



THE
Avicultural Magazine,

BEING THE JOURNAL OF
THE AVICULTURAL SOCIETY
FOR THE STUDY OF
FOREIGN AND BRITISH BIRDS
IN FREEDOM AND CAPTIVITY.

EDITED BY
J. LEWIS BONHOTE, M.A., F.L.S., F.Z.S., M.B.O.U.

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REPORT OF THE COUNCIL

For 1911-1912.

During the past year the progress of the Society has been steady and satisfactory. No important changes in the administration have been made, except the appointment of Prof. G. H. WOOLDRIDGE, F.R.C.V.S., as Hon. Veterinary Surgeon in succession to Mr. Arthur GILL, M.R.C.V.S., who was compelled to resign that post on his departure for Canada.

The membership shows a slight but encouraging increase, as compared with the last few years; and thanks to the ready co-operation of those members who have contributed articles and notes on birds, and of those who have kindly subscribed to the illustration and general funds of the Society; the Magazine, under the editorship of Mr. J. L. BONHOTE, has fully maintained its standard of excellence in every particular.

The desire of the Council that Members of the Society should be given the opportunity of becoming personally acquainted was again practically expressed by holding an informal reception, followed by tea, in the Zoological Gardens after their meeting in June. To further the same object, they propose to have a dinner—the date and particulars of which will be announced later—at a London restaurant in the winter.

Signed for the Council,

R. I. POCKOCK,

Hon. Business Secretary.

ALPHABETICAL LIST OF CONTRIBUTORS.

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p. 91, lines 5 & 9 *for* Calocetta *read* Lalocetta.

p. 164 line 1 *for* (Trapealis de phillippi) *read* (Trupialis de flippia).

p. 273, 12 lines from bottom, *for* galeritus *read* galerita.

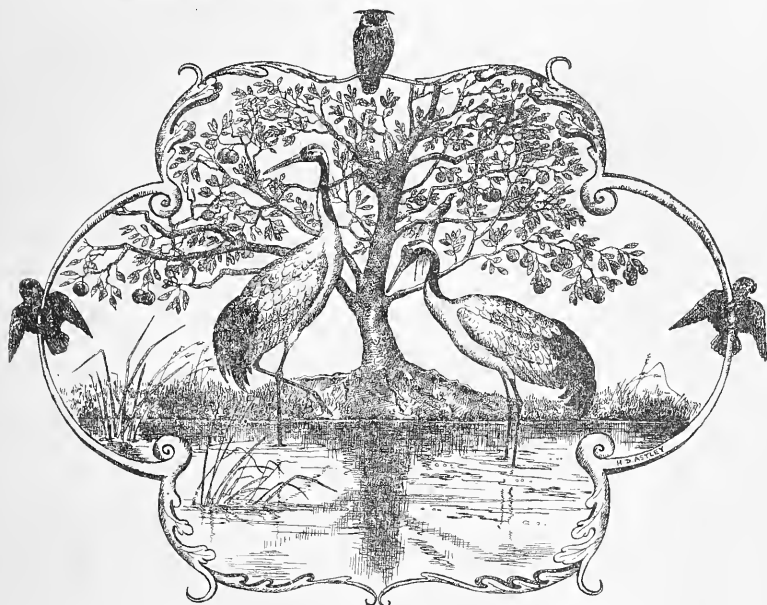
p. 322, line 8, *for* splendeus *read* splendeus.

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- COOPER, WILLIAM; Aislaby Hall, Pickering, Yorks. (March, 1907).
- CORBET, Lady; Acton Reynold, Shrewsbury. (Oct., 1905).
- CORBET, Sir ROLAND J., Bart.; Lathbury Park, Newport Pagnell. (May, 1911).
- CORY, REGINALD R.; Duffryn, near Cardiff. (August, 1905).

- CRANLEY, Viscountess; Beechworth, Hampstead, N.W. (July, 1910).
 CROFT, A. B.; The Clock House, Ashford, Middlesex. (May, 1907).
 CRONKSHAW, J.; 193, Manchester Road, Accrington. (Dec., 1894).
 80 CROSS, W. SIMPSON, F.Z.S.; 18, Earle Street, Liverpool. (Jan., 1908).
 CUMMINGS, A.; 16, Promenade Villas, Cheltenham. (Dec., 1896).
 CUNINGHAM, MARTIN; Goffs Oak House, Waltham Cross. (Oct., 1908).
 CURRY, Mrs.; The Pit House, Ewell, Surrey. (Feb., 1906).
 CUSHNY, CHARLES; (*No permanent address*). (June, 1906).
- DAVIES, CLAUDE G., M.B.O.U.; "D" Squadron, Cape Mounted Rifle-
 men, Matatiele, E. Griqualand, S. Africa. (July, 1909).
 DAWNAY, The Lady ADELAIDE; Brampton House, Northampton.
 (July, 1903).
 DELL, CHARLES; 12, High Street, Harlesden, N.W. (July, 1909).
 DENMAN, ARTHUR, M.A., F.Z.S., F.S.A., 29, Craley Gardens, South
 Kensington, S.W. (Sept., 1909).
 DENNIS, Mrs. H. E.; St. Leonard's Park, Horsham. (March, 1903).
 90 DE TAINTÉGNIES, La Baronne Le Clément; Cleveland, Minehead,
 Somerset. (Feb., 1902).
 DEWAR, D., I.C.S.; c/o Messrs. Grindley & Co., 54, Parliament Street,
 S.W. (Sept., 1905).
 DE WINTON, WILLIAM EDWARD, F.Z.S., M.B.O.U.; Southover, Burwash,
 Sussex. (Aug., 1903).
 DONALD, C. H.; c/o The Alliance Bank of Simla, Ltd., Simla, India.
 (March, 1906).
 DOUGLAS, Miss; Rose Mount, Pitlochry, N.B. (June, 1905).
 DOUGLAS, WILLIAM C., F.Z.S.; 9, Trebovir Road, Earl's Court, S.W.
 (Nov., 1900).
 DREWITT, FREDERICK DAWTREY, M.A., M.D., F.R.C.P., F.Z.S.,
 M.B.O.U.; 14, Palace Gardens Terrace, Kensington, W. (May,
 1903).
 DRUMMOND, Miss; Maïus of Meggiuchi, Errol, N.B. (Feb., 1905).
 DUFF, The Lady GRANT; Earl Soham Grange, Framlingham, Suffolk.
 (Aug., 1905).
 DUNLEATH, The Lady; Ballywalter Park, Ballywalter, co. Down,
 Ireland. (August, 1897).
 100 DUTTON, The Hon. and Rev. Canon; Bibury, Fairford. (Orig. Mem.)
- EDWARDS, G.; 377, Coldharbour Lane, Brixton, S.W. (August, 1902).
 ELLIOT, Mrs. C. FOGG; Staindrop, Darlington. (Dec., 1910).
 EZRA, DAVID; 3, Kyd Street, Calcutta. (June, 1902).
- FARMBOROUGH, PERCY W., F.Z.S.; Lower Edmonton. (June, 1896). *
 FARRAR, The Rev. C. D.; Micklefield Vicarage, Leeds. (Jan., 1895).
 FASEY, WILLIAM R.; The Oaks, Holly Bush Hill, Snaresbrook, N.E.
 (May, 1902).

- FETHERSTONHAUGH, The Hon. Mrs.; The Mill House, Wimbledon Common, S.W. (Sept., 1910).
- FIELD, GEORGE; Sorrento, Staplehurst, Kent. (March, 1900).
- FINN, FRANK, B.A., F.Z.S., M.B.O.U.; 36, St. George's Road, Regent's Park, London, N.W. (March, 1895).
- 110 FIREBRACE, Mrs.; 26, Old Queen Street, Westminster, S.W. (Feb. 1911).
- FLOWER, Captain STANLEY SMYTH, F.L.S., F.Z.S., M.B.O.U.; Director, Egyptian Government Zoological Gardens; Giza, Cairo, Egypt. (Jan., 1903).
- FLOWER, Mrs. STANLEY; Longfield, Tring, Herts. (March, 1909).
- FOCKLEMAN, HERR AUGUST; Tier Park, Gross-Birstel, Hamburg. (Nov., 1907).
- FOLLETT, The Lady JULIA; Woodside, Old Windsor. (Oct., 1903).
- FORTESCUE, Col. H.; Palmouth House, Newmarket. (Oct., 1908).
- FOSTER, WM. HILL; 164, Portland Street, Southport. (Jan., 1902).
- FOWLER, CHARLES; 26, Broad Street, Blaenavon. (Dec., 1894).
- FROST, WILFRED; c/o Zoological Society, Regent's Park, N.W. (July, 1908).
- GALLAND, CHARLES E.; Bradley House, Market Weighton, E. Yorks. (May, 1909).
- 120 GALLOWAY, P. F. M.; Durban, Rectory Road, Caversham, Reading. (March, 1907).
- GHIGI, M. le Prof. Alessandro; Via d'Azeglio, Bologna, Italy. (March, 1911).
- GIBBS, Mrs. H. MARTIN; Barrow Court, Flax Bourton, R.S.O., Somerset. (April, 1904).
- GIBBINS, WILLIAM B.; Ettington, near Stratford-on-Avon. (June, 1895). *
- GIFFORD, EDWARD WINSLOW; California Academy of Sciences, San Francisco, California, U.S.A. (April, 1908).
- GILBEY, Sir WALTER, F.Z.S.; Elsenham Hall, Elsenham, Essex. (Dec., 1907).
- GILES, HENRY M., M. Anst. O. U. (Orig. Mem.); Zoological Gardens, Perth, Western Australia. (June, 1903).
- GILL, ARTHUR, M.R.C.V.S.; Veterinary Establishment, Bexley Heath, Kent. (Dec., 1899).
- GLADSTONE, Miss J.; The Lodge; Parkstone, Dorset. (July, 1905).
- GODDARD, H. E.; Rothsay, Thicket Road, Sutton, Surrey. (Feb., 1899).
- 130 GODMAN, P. DUCANE, D.C.I., F.R.S., F.Z.S.; President of the British Ornithologists' Union; 45, Pont Street, S.W. (Oct., 1904). (*Honorary Member*).
- GOODALL, A. A.; 12, Ildersley Grove, West Dulwich, S.E. (Nov., 1909).
- GOODALL, J. M.; 52, Oxford Gardens, N. Kensington, London, W. (July, 1905).
- GOODCHILD, HERBERT, M.B.O.U.; 66, Gloucester Road, Regent's Park, N.W. (Oct., 1902).

- GOODFELLOW, WALTER, M.B.O.U.; Mont Flenri, Southbourne Grove, Bonnhemonth. (June, 1897).
- GORTER, Madame; The Delta, Walmer, Kent. (Nov., 1901).
- GOSSE, PHILIP, M.R.C.S.; Castlemead, Beaulieu, Hants. (April, 1911).
- GOW, J. BARNETT; 86, St. Vincent Street, Glasgow, and Ledcameroch, Bearsden, Glasgow. (Feb., 1906).
- GRABOWSKY, F., Director of the Zoological Gardens; Breslau, Germany. (June, 1905).
- GRAY, HENRY, M.R.C.V.S.; 23, Upper Phillimore Place, W. (June, 1906).
- 140 GREENING, LINNÆUS; Fairlight, Grappenhall, nr. Warrington. (Jan., 1911).
- GREGORY, Mrs.; Melville, Parkstone, Dorset. (Dec., 1901).
- GRIFFITHS, M. R.; Caizley House, Temple Road, Stowmarket. (May, 1902).
- GRISCOM, LUDLOW; 21, Washington Square North, New York City, U.S.A. (April, 1905).
- GRÖNVOLD, HENRIK; 26, Albert Bridge Road, Battersea Park, S.W. (Nov., 1902).
- GUILFORD, Miss H.; 23, Lenton Avenue, The Park, Nottingham. (March, 1903).
- GULBENKIAN, C. S.; 38, Hyde Park Gardens, London, W. (Dec., 1908).
- GUNN, W. CECIL; The Red House, Bickley, Kent. (Jan., 1910).
- GUNNING, Dr. J. W. B., F.Z.S., Director of the Transvaal Museum and Zoological Gardens; Pretoria, South Africa. (Sept., 1906).
- GUNTHER, ALBERT, M.A., M.D., Ph.D., F.R.S., F.Z.S., M.B.O.U.; 2, Lichfield Road, Kew Gardens. (Sept., 1902). (*Honorary Member*).
- 150 GURNEY, JOHN HENRY, F.Z.S., M.B.O.U.; Keswick Hall, Norwich; and Athenæum Club, Pall Mall, S.W. (Dec., 1904).
- HAAGNER, A. K., F.Z.S., M.B.O.U., Transvaal Museum, Pretoria, South Africa. (Nov., 1905).
- HALKED, Lieut. N. G. B.; King's Own Yorkshire Light Infantry; 3rd Battalion, Egyptian Army, Khartoum. (Dec., 1908).
- HAMILTON, Miss; 2, Upper Wimpole Street, W. (April, 1902).
- HARDING, W. A., M.A., F.Z.S.; Histon Manor, Cambridge. (Dec., 1903).
- HARDY, LAWRENCE, M.P.; Sandling Park, Hythe, Kent. (Nov., 1906).
- HAREWOOD, The Countess of; Harewood House, Leeds. (March, 1903).
- HARLEY, Mrs. F.; Bampton Bryan, Herefordshire. (1908).
- HARPER, Miss; 6, Ashburnham Road, Bedford. (March, 1902).
- HARPER, EDWARD WILLIAM, F.Z.S., M.B.O.U.; Government Road, Nairobi, British East Africa. (Feb., 1901).
- 160 HARTLEY, Mrs.; St. Helen's Lodge, Hastings. (April, 1897).
- HARVEY, The Hon. Lady; Langley Park, Slough. (Oct., 1906).
- HAWKE, The Hon. MARY C.; Wighill Park, Tadcaster. (Nov., 1900).
- HAWKINS, J. W.; 206, Clive Road, West Dulwich, S.E. (Jan., 1899).

- HAZELRIGG, Sir ARTHUR; Noseley Hall, Leicester. (March, 1907).
HEMSWORTH, The Rev. B., M.A., J.P.; Monk Fryston Hall, South Milford, Yorks. (June, 1901).
HETLEY, Dr.; Beaufort House, 114, Church Road, Norwood, S.E. (Sept., 1911).
HETLEY, Mrs. HENRY; Beaufort House, 114, Church Road, Norwood, S.E. (July, 1910).
HEWITT, H. C.; Hope End, Ledbury, Herefordshire. (Jan., 1905).
HEYWOOD, RICHARD; Narborough, Norfolk. (Oct., 1911).
170 HILL, Mrs. F. STAVELEY; Oxley Manor, Wolverhampton. (Oct., 1905).
HINCKES, Miss F. MARJORIE; Barons Down, Dulverton. (Feb., 1908).
HINDLE, R. FRANKLIN; 34, Brunswick Road, Liverpool. (Sept., 1898).
HODGSON, The Hon. Mrs.; Clopton, Stratford-on-Avon. (March, 1903).
HOLDEN, RALPH A., F.Z.S.; 5, John Street, Bedford Row, London. (May, 1906).
HOLLIS, BERNARD; 9, George Street, Hull. (Sept., 1910).
HOPKINSON, Dr. EMILIUS; D.S.O., M.A., M.B. Oxon., 45, Sussex Square, Brighton. (Oct., 1906).
HOPSON, FRED C.; Northbrook Street, Newbury. (March, 1897).
HORSBRUGH, Major BOYD R., A.S.C.; Morristown Biller, Newbridge, Co. Kildare, Ireland. (Jan., 1898).
HOUSDEN, JAMES B.; Brooklyn, Cator Road, Sydenham, S.E. (Orig. Mem.)
180 HOWARD, ROBERT JAMES, M.B.O.U.; Shear Bank, Blackburn. (April, 1903).
HOWARD-VYSE, H.; Stoke Place, Slough. (Nov., 1906).
HOWELL, THOS. A.; 109, Wall Street, New York, U.S.A. (April, 1910).
HOWMAN, Miss; 6, Essex Grove, Upper Norwood. (March, 1897).
HOYLE, Mrs.; The Vicarage, Stoke Pogis, Bucks. (Nov., 1904).
HUBBARD, GEORGE; 112, Fenchurch Street, E.C. (Jan., 1905).
HUGHES, Lady; Shelsley Grange, Worcester. (Nov., 1904).
HUMPHREYS, RUSSELL; Bryn Court, Woldingham, Surrey. (April, 1896).
HUSBAND, Miss; Clifton View, York. (Feb., 1896).
HUTCHINSON, Miss ALICE; Alderton Vicarage, Chippenham, Wilts. (August, 1907).
190 INCHQUIN, The Lady; Dromoland Castle, Newmarket-on-Fergus, County Clare, Ireland. (Nov., 1897).
INGRAM, COLLINGWOOD; The Bungalow, Westgate-on-Sea. (Oct., 1905).
INGRAM, Sir WILLIAM, Bart.; 65, Cromwell Road, London, S.W. (Sept., 1904).
ISAAC, CHARLES; Somerton, Bath Road, Slough. (March, 1906).
IVENS, Miss; 13, Rua da Piedada, Campo d'Ourique, Lisbon, Portugal. (August, 1903).

- JARDINE, Miss EMILY; St. Michael's Home, Kimberley, S. Africa. (Jan., 1903).
- JOHNSTONE, Mrs. F. J.; Burrswood, Groombridge, Sussex. (May, 1900).
- KEMP, R.; c/o Mrs. Kemp, Long Sutton, near Langport, Somersetshire. (March, 1903).
- KENNEDY, Lieut. G.; c/o Mrs. Kennedy, 7, Albion Road, Sutton, Surrey. (1911).
- KIRCHNER, Mrs.; Sea Copse Hill, Wootton, Isle of Wight. (Jan., 1911).
- 200 KUSER, ANTHONY R.; Bernardsville, New Jersey, U.S.A. (Dec., 1908).
- LANCASTER, JOHN; Dunchurch Lodge, near Rugby. (March, 1904).
- LASCILLES, The Hon. GERALD, F.Z.S., M.B.O.U.; 'The King's House, Lyndhurst. (Oct., 1896).
- LAWSON, Mrs. F. W.; Adel, Leeds. (Nov., 1903).
- LEE, Mrs. E. D.; Hartwell House, Aylesbury. (July, 1906).
- LEEKE, Miss DOROTHY; 9, Hertford Street, Mayfair, W. (May, 1909).
- LEIGH, Cecil; Lyburn Park, near Lyndhurst, Hants. (Nov., 1906).
- LELY, Mrs. G. PEEL; Woodlands, Beckenham, Kent. (Feb., 1910).
- LEWIS, W. JARRETT; Corstorphine, Ryde, I. of W. (Oct., 1904).
- LILFORD, The Lady; Lilford Hall, Oundle, Northamptonshire. (Jan., 1898).
- 210 LITTLE, Dr. G. W.; 47, Ridge Street, Glens Falls, New York, U.S.A. (1911).
- LLOYD, Lieut. A. M.; 1/24th Regiment, Chatham Barracks, Chatham. (April, 1911).
- LOCKYER, ALFRED; St. Monica's Lodge, Elm Park Road, Winchmore Hill, N. (Dec., 1905).
- LONG, Mrs.; Sherrington Manor, Berwick, Sussex. (Feb., 1907).
- LOVELACE, The Countess of; Wentworth House, Chelsea Embankment, London, S.W. (May, 1906).
- LYON, Miss K.; Harewood, Horsham. (Nov., 1894).
- MCGEAGH, Dr. R. T.; 23, Breeze Hill, Bootle, Lancs. (Aug., 1908).
- MCGEE, The Rev. Father; Keppel Street, Bathurst, N.S.W. (July, 1908).
- MALONE, Mrs. M. L'ESTRANGE, The Manor Cottage, Clewer Green, Windsor. (Jan., 1902).
- MANNERS-SMITH, Lieut.-Col.; The Presidency, Nepal, India. (1911).
- 220 MAPPIN, STANLEY; 12, Albert Hall Mansions, Kensington Gate, S.W. (April, 1911).
- MARSHALL, ARCHIBALD McLEAN; Chitcombe, Brede, Sussex. (Jan., 1906).
- MARTIN, H. C.; 147, Victoria Road, Old Charlton, Kent; and Saladero, Liebig, Fray Bentos, Uruguay. (Jan., 1897).
- MARTIN, H. J.; Clock House Farm, Woodmaustorne, Surrey. (June, 1911).

- MARTIN-MASSON, G. J.; 5, Cartickblacker Avenue, Partadown, Ireland.
- MARTORELLI, Dr. GIACINPO, M.B.O.U., etc.; Collezione, Turati, Museo Civico di Storia Naturale, Milan, Italy. (July, 1906). (*Honorary Member*).
- MATHEWS, GREGORY M., F.R.S., Edin., F.L.S.; Langley Mount, Watford, Herts. (Dec., 1909).
- MATHIAS, HAYWARD W., F.R.H.S.; Lucerne, Stubbington, Fareham, Hants.
- MEADR-WALDO, E. G. B., F.Z.S., M.B.O.U.; Stonewall Park, Edenbridge, Kent. (Jan., 1895).
- MILLER, TINNISWOOD; 27, Belgrave Road, S.W. (March, 1905).
- 230 MILLS, The Hon. VIOLET; Wilderness, Sevenoaks. (Oct., 1907).
- MILLSUM, O; Everburg, Brabant, Belgium. (Aug. 1909).
- MITCHELL, HARRY; Holmefield, Lyndhurst, Hants. (Feb., 1904).
- MOERSCHIELL, F.; Imperial Hotel, Malvern. (June, 1895).
- MOMBER, Mrs.; 77, Hauley Street, W. (Sept., 1907).
- MONRY, C. G. CHIOZZA, M.P.; Tyhurst, Chaldon, Surrey. (Oct., 1911).
- MONTAGU, Hon. F. S., M.P., M.B.O.U.; 59, Bridge Street, Cambridge, and 12, Kensington Palace Gardens, W. (May, 1905).
- MOORE, WM. FAWCETT; (*No permanent address*). (Aug., 1903).
- MORRISON, Hon. Mrs. McLAREN; Kewfck Park, Northallerton, Yorks. (Sept., 1911).
- MORSHHEAD, Lady; Forest Lodge, Binfield, Bracknell, Berks. (Dec., 1894). *
- 240 MORTIMER, Mrs.; Wigmere, Holmwood, Surrey. (Orig. Mem.)*
- MUNDIS, Miss SYBIL MILLER; Shipley Hall, Derby. (Jan., 1909).
- MURRAY, A. L. KEITH; 1, Chindaleigh Villas, Bideford, N. Devon. (Aug. 1908).
- MYLAN, JAS. GEORGE, B.A., M.B. (Univ. Cal.); L.R.C.P. and L.R.C.S., (Ed.) &c., 90, Upper Hanover Street, Sheffield. (Dec., 1901).
- NEWALL, Mrs.; Red Heath, Croxley Green, R.S.O., Herts. (June, 1911).
- NEWMAN, T. H., F.Z.S., M.B.O.U.; Newlands, Harrowdene Road, Wembley, Middlesex. (May, 1900).
- NICHOLS, WALTER B., M.B.O.U.; Stonr Lodge, Bradfield, Manningtree. (Jan., 1907).
- NICHOLSON, T. G.; 'Glencoe,' Walton on Thames, Surrey. (Oct., 1911).
- NICOLL, MICHAEL J., M.B.O.U.; Zoological Gardens, Giza, Cairo, Egypt. (July, 1906).
- NOBLE, Mrs.; Park Place, Henley-on-Thames. (Oct., 1900).
- 250 OAKLEY, W.; 34, High Street, Leicester. (March, 1896).*
- OATES, F. W.; White House Farm, New Leeds, Leeds. (Oct., 1897).
- OBERHOLSER, HARRY C.; 1445, Girard Street, N.W., Washington, D.C., United States of America. (Oct., 1903).

- OGILVIE-GRANT, W. R., F.Z.S., M.B.O.U.; British Museum (Nat. Hist.), Cromwell Road, S.W. (Dec., 1903).
- OGLE, BERTRAM SAVILLE, M.B.O.U.; Steeple Aston, Oxford. (Dec., 1902).
- OLIPHANT, TREVOR; Teston Rectory, Maidstone. (May, 1908).
- O'REILLY, NICHOLAS S.; 8, Marine Parade, Brighton. (Dec., 1894).
- OSTREHAN, J. ELIOTT D.; Bank House, Thame, Oxon. (April, 1903).
- PAGE, WESLEY T., F.Z.S.; Glenfield, Graham Avenue, Mitcham, Surrey. (May, 1897).
- PAINTER, K. V.; 2508, Euclid Avenue, Cleveland, Ohio, U.S.A. (Dec., 1909).
- 260 PALMER, Mrs. G. W.; Marlston House, near Newbury. (Oct., 1905).
- PAM, ALBERT, F.Z.S.; Malting Farm, Little Hallingbury, Bishop's Stortford. (Jan., 1906).
- PAM, HUGO, C.M.Z.S.; 65, Bishopsgate, E.C. (Sept., 1911).
- PARKER, DUNCAN, J.P.; Clopton Hall, Woolpit, Bury St. Edmunds. (June, 1903).
- PARKIN, THOMAS, M.A., F.R.G.S., F.Z.S., M.B.O.U.; Fairseat, High Wickham, Hastings. (Oct., 1903).
- PAUWELS, R.; Everberg, par Cortenberg, Brabant, Belgium. (Dec., 1904).
- PEIR, P.; c/o W. G. Peir, Esq., 60, Elizabeth Street, Sidney, N. S. Wales. (July, 1903).
- PENNANT, Lady EDITH DOUGLAS; Solham House, Newmarket, Cambs. (Sept., 1908).
- PENROSE, FRANK G., M.D., F.Z.S., M.B.O.U.; Wick House, Downton, Salisbury. (Dec., 1903).
- PERRIAU, Capt. G. A.; 2/4 Gurkha Rifles, Bakloh, Punjab, India. (Dec., 1903).
- 270 PERRING, C. S. R.; 1, Walpole Road, Twickenham. (Sept., 1895).
- PHILLIPS, REGINALD; 26, Cromwell Grove, West Kensington Park, W. (Orig. Mem.)*
- PHILLIPS, JOHN C.; Knobfields, Wenham, Mass., U.S.A. (March, 1910).
- PHILLIPS, Mrs. E. LORT, F.Z.S.; 79, Cadogan Square, S.W. (April, 1907).
- PICARD, HUGH K.; 298, West End Lane, N.W. (March, 1902).
- PICHOT, Mons. PIERRE AMEDEC; 132, Boulevard Hausmann, Paris. (Sept., 1910).
- PICKFORD, RANDOLPH JOHN; Thorn Lea, Carmel Road, Darlington.
- POCOCK, R. I., F.R.S., F.L.S., F.Z.S., M.B.O.U.; Zoological Society's Gardens, Regent's Park, N.W. (Feb., 1904). (*Hon Secretary*).
- POWIS, The Earl of; 45, Berkeley Square, W.; and Powis Castle, Welshpool. (April, 1902).
- PRINCETON UNIVERSITY, LIBRARY OF; Princeton, New Jersey, U.S.A. (Nov., 1907).
- 280 PYCRAFT, W. P., A.L.S., F.Z.S., M.B.O.U., &c.; British Museum (Nat. Hist.), Cromwell Road, S.W. (Nov., 1904).

- RADCLIFFE, Capt. A. DELMÉ; 105th Maratha Light Infantry, Poona, India.
- RATHBORNE, HENRY B.; Dunsinea, Castleknock, co. Dublin. (May, 1901).
- RATTIGAN, G. E.; Janarkslea, Cornwall Gardens, S.W. (Aug., 1908).
- RAVEN, W. H.; 239, Derby Road, Nottingham. (Dec., 1909).
- REID, Mrs.; Punchal, Madeira. (Feb., 1895).
- RENSHAW, Dr. GRAHAM, M.B., M.R.C.S.; Bridge House, Sale, Manchester. (Jan., 1910).
- RICE, Captain G.; Glayquhat, Blairgowrie, N.B. (May, 1902).
- RILEY, JOSEPH H.; U.S. National Museum, Washington, D.C., U.S.A. (June, 1906).
- RITCHIE, NORMAN; The Holmes, St. Boswell's, N.B. (Feb., 1903).
- 290 ROBBINS, HENRY; Billacy View, Mill Hill, Middlesex. (April, 1908).
- ROBERT, Madam; Hartland House, Sutton, Surrey. (June, 1906).
- ROBERTS, Mrs., M. Aust. O.U.; Beaumaris, Montpelier Street, Hobart, Tasmania. (June, 1903).
- ROBERTS, Mrs. NORMAN; 8, Holbeck Hill, Scarborough. (Nov., 1907).
- ROGERS, Lt.-Col. J. M., D.S.O., F.Z.S., M.B.O.U. (Late Royal Dragoons); Riverhill, Sevenoaks. (April, 1907).
- ROGERSON, A.; Fleurville, Ashford Road, Cheltenham. (Dec., 1902).
- ROTCH, Mrs.; Sunnyclyff, Cholmondeley Road, West Kirby. (June, 1897).
- ROTHSCHILD, The Hon. L. WALTER, M.P., D.Sc., F.Z.S., M.B.O.U.; The Museum, Tring, Herts. (Jan., 1900).
- ROTHWELL, JAMES E.; 153, Sewall Avenue, Brookline, Mass., U.S.A. (Oct., 1910).
- ST. QUINTIN, WILLIAM HERBERT, F.Z.S., M.B.O.U.; Scampston Hall, Rillington, York. (Orig. Mem.)
- 300 SAVAGE, A.; 16, Rue Gibert, Rouen, Seine Inférieure, France. (April, 1895).
- SCHARFF, R. F., Ph.D.; The National Museum, Phoenix Park, Dublin. (Oct., 1905).
- SCHLÜTER, JOHN C.; "Hammerbrook," Pollard's Hill East, Norbury, S.W. (Dec., 1910).
- SCLATER, W. L., M.A., F.Z.S.; 10, Sloane Court, S.W. (Aug., 1904).
- SCLATER, PHILIP LUTLEY, M.A., D.Sc., F.R.S., F.Z.S., M.B.O.U.; Odilham Priory, Winchfield, Hants. (Sept., 1902). (*Hon. Member*).
- SEPPINGS, Captain J. W. H.; The Army Pay Office, Bootham, York. (Sept., 1907).
- SETH-SMITH, DAVID, F.Z.S., M.B.O.U.; 34, Elsworthly Road, South Hampstead, N.W. (Dec., 1894).
- SETH-SMITH, LESLIE M., B.A., M.B.O.U.; Alleyne, Caterham Valley, Surrey; and Kampala, Uganda. (July, 1902).
- SETH-SMITH, Mrs. W.; Alleyne, Caterham Valley, Surrey. (Sept., 1904).
- SHELLEY, Captain GEORGE ERNEST, F.Z.S., F.R.G.S., M.B.O.U.; 39, Egerton Gardens, South Kensington, S.W. (August, 1903).

- 310 SHERBROOKE, Mrs. P.; Ravenswyke, Kirbymoorside, Yorks. (March, 1897).
 SICH, HERBERT LEONARD; c/o Dr. L. Lovell-Keays, Park Lodge, East Hoathly, Sussex. (Feb., 1902).
 SILVER, ALLEN; 3, Gateley Road, Brixton, S.W. (Aug., 1904).
 SIMPSON, ARCHIBALD; Blackgates House, Tingley, near Wakefield. (Feb., 1901).
 SLATER, ARTHUR A.; Keswick Road, St. Helen's. (Nov., 1894).
 SMITH, C. BARNBY; Woodlands, Retford. (August, 1905).
 SMITH, Miss E. L. DORIE; Trescoe Abbey, Isle of Scilly, Cornwall. (August, 1908).
 SORNBORGER, J. D.; Rowley, Massachusetts. (Oct., 1905).
 SOUTHESK, The Countess of; Kinnaird Castle, Brechin, N.B. (Feb., 1901).
 SOUTHPORT CORPORATION; Curator; Hesketh Park, Southport. (Jan., 1904).
 320 STANSFELD, Captain JOHN; Dunninald, Montrose, N.B. (Dec., 1895).
 STANYFORTH, Mrs.; Kirk Hamerton Hall, York. (Nov., 1897).
 STAPLES-BROWNE, R.; Bampton, Oxfordshire. (August, 1908).
 STERCKMANS, Dr. C.; 28, Rue de la Station, Louvain, Belgium. (Sept., 1910).
 STEVENS, H.; Silonibari, P.O., Lakhimpur North, Upper Assam. (Oct., 1911).
 STIRLING, Mrs. CHARLES; Old Newton House, Doune. (Sept., 1904).
 STOCKPORT CORPORATION; Superintendent; Vernon Park, Stockport. (Oct., 1902).
 STURTON-JOHNSON, Miss; Oratava House, Ore, Hastings. (May, 1897).
 STYLE, G. M.; 9, Smith Square, Westminster, S.W. (Jan., 1911).
 SUFFOLK and BERKSHIRE, The Countess of; Charlton Park, Malmesbury. (Feb., 1909).
 330 SUGGITT, ROBERT; Suggitt's Lane, Cleethorpes, Grimsby. (Dec., 1903).
 SUTCLIFFE, ALBERT; Field House, Grimsby. (Feb., 1906).
 SUTTON, Lady; Benham-Valeuce, Speen, Newbury. (Dec., 1901).
 SWAYSLAND, WALTER; 47, Queen's Road, Brighton. (Orig. Mem.) *
 TANNER, Dr. FRANK L.; Vanvert House, Guernsey. (Jan., 1904).
 TANNER, Mrs. SLINGSBY; 48, Lower Sloane Street, S.W. (Oct., 1905).
 TEMPLE, W. R.; Ormonde, Datchet, Bucks. (June, 1907).
 TERRY, Major HORACE A., M.B.O.U. (late Oxfordshire Light Infantry); The Lodge, Upper Halliford, Shepperton. (Oct., 1902).
 TESCHEMAKER, W. E., B.A.; Ringmore, Teignmouth, Devon. (May, 1904).
 THOMAS, HENRY; 15, Clinning Road, Birkdale, Southport. (Jan., 1895).
 340 THOMAS, Miss F. G. F.; Hurworth Manor, Darlington. (March, 1899).
 THOMAS, Mrs. HAIG; Moyles Court, Ringwood, Hants. (August, 1907).
 THOMASSET, BERNARD C., F.Z.S.; Hawkenbury, Staplehurst, Kent. (July, 1896).

- THOMASSET, H. P.; Cascade Estate, Mahé, Seychelles. (Nov., 1906).
 THOMPSON, Mrs. F. F.; Canandaigua, N.Y., U.S.A. (July, 1907).
 THORNILEY, PERCY WRIGHT; Shooter's Hill, Wem., Shrewsbury.
 Feb., 1902).
 THORPE, CHARLES; Selborne, Springfield Road, Wallington, Surrey.
 (Dec., 1901).
 THORPE, F. C.; The Zoo, Sunnyside, Worksop. (Jan., 1902).
 TICEHURST, NORMAN FREDERIC, M.A., M.B., F.R.C.S., F.Z.S.; 35,
 Pevensey Road, St. Leonards-on-Sea. (Dec., 1906).
 TOMES, W., J.P.; Glenmoor, 31, Billing Road, Northampton. (Dec.,
 1902).
 350 TOWNSEND, STANLEY M.; 3, Swift Street, Fulham. (Sept., 1898).
 TOYR, Mrs.; Stanhope, Bideford, N. Devon. (Feb., 1897).
 TRENOW, EVELYN HENRY, F.Z.S.; Ivy Lodge, Ripping, Essex. (Nov.,
 1910).
 TRESTRAIL, Mrs.; Southdale, Clevedon. (Sept., 1903).
 TREVOR-BATYF, AUBYN, B. R., M.A., F.L.S.; Stoner Hill, Peters-
 field. (July, 1898).
 TURNER, Mrs. TURNER; Beaulieu Springs, Beaulieu, Hants. (July,
 1910).
 TWEEDIE, Capt. W., 93rd Highlanders; Stobs Castle, Stobs Camp,
 By Hawick. (April, 1903).
 VALENTINE, ERNEST; 7, Highfield, Workington. (May, 1899).
 VAN OORT, Dr. E. D.; Museum of Natural History, Leiden, Holland.
 VERNON, Mrs. E. WARREN; Toddington Manor, Dunstable, Bedford-
 shire. (Nov., 1907).
 360 VILLIERS, Mrs.; The Shielding, Ayr, N.B. (August, 1906).
 WADDELL, Miss PEDDIE; 4, Great Stuart Street, Edinburgh, N.B.
 (Feb., 1903).
 WAIT, Miss L. M. ST. A.; 12, Rosary Gardens, S.W. (Feb., 1909).
 WALKER, Miss; Peasey House, Blairgowrie, N.B. (Jan., 1903).
 WALKER, Miss H. K. O.; Chesham, Bury, Lancs. (Feb., 1895).
 WALLOP, The Hon. FREDERIC; (Feb., 1902).
 WARDE, The Lady HARRIET, Knotley Hall, Tunbridge. (Aug., 1903).
 WATERFIELD, Mrs. NORL E.; Port Sudan, Red Sea. (Sept., 1904).
 WATERHOUSE, Mrs. D.; 6, Esplanade, Scarborough. (Feb., 1903).
 WATSON, S.; 37, Tithebarn Street, Preston. (Feb., 1906).
 370 WEST, COLIN; The Grange, South Norwood Park. (Jan., 1906).
 WHITAKER, JOSEPH I. S., F.Z.S., M.B.O.U.; Mafitano, Palermo, Sicily.
 (August, 1903).
 WHITEHEAD, Mrs. HENRY; Haslem Hey, Bury, Lancs. (March, 1902).
 WIGLESWORTH, JOSEPH, M.D., M.B.O.U.; Rainhill, Lancashire. (Oct.,
 1902).
 WILLFORD, HENRY; Upland View, Haven Street, Ryde, Isle of Wight.
 (Nov., 1907).

- WILLIAMS, Mrs. C. H., 49, Okehampton Road, St. Thomas, Exeter.
(May, 1902).
- WILLIAMS, Mrs. HOWARD; Oatlands, Sunbridge Avenue, Bromley,
Kent. (April, 1902).
- WILLIAMS, SYDNEY, Jun., F.Z.S.; Holland Lodge, 275, Fore Street,
Edmonton, N. (Feb., 1905).
- WILSON, Captain P. A.; Down Firs, Hambledon, Hants. (Sept. 1909).
- WILSON, MAURICE A., M.D.; Kirkby Overblow, Pannal, S. O., York.
(Oct., 1905).
- 380 WILSON, T. NEEDHAM; Oak Lodge, Bitterne, near Southampton.
(Dec., 1901).
- WINCHILSEA and NOTTINGHAM, The Countess of; Harlech, Merioneth.
(April, 1903).
- WITHERBY, The Rev. T. C.; 15, High Street, Poplar. (July, 1910).
- WOLFE, Miss GEORGINA; S. John's, 37, Granada Road, E. Southsea.
(August, 1904).
- WORKMAN, WM. HUGHES, M.B.O.U.; Lismore, Windsor, Belfast.
(May, 1903).
- WORMALD, II.; The Heath, Dereham, Norfolk. (Dec., 1904).
- WRIGHT, R. N.; Church Hill, Robert Road, Handsworth, near Birmingham.
(Dec., 1908).
- YOUNGER, Miss BARBARA HENDERSON; 4, Douglas Gardens, Edinburgh.
(July, 1909).
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RULES OF THE AVICULTURAL SOCIETY

As amended January, 1908.

1.—The name of the Society shall be THE AVICULTURAL SOCIETY and its object shall be the study of Foreign and British Birds in freedom and in captivity. Poultry, Pigeons and Canaries shall be outside the scope of the Society. The year of the Society, with that of each volume of the Society's Magazine, which shall be known as *The Avicultural Magazine*, shall commence with the month of November and end on the 31st of October following.

2.—The Avicultural Society shall consist of Ordinary and Honorary Members; and the latter shall be restricted in number to six, and be elected by the Council.

3.—The Officers of the Society shall be elected, annually if necessary, by members of the Council in manner hereinafter provided, and shall consist of a President, one or more Vice-Presidents, a Business Secretary, a Correspondence Secretary, an Editor, a Treasurer, an Auditor, a Scrutineer, and a Council of fifteen Members. The Secretaries, Editor, and Treasurer, shall be *ex officio* Members of the Council.

4.—New Members shall be proposed in writing, and the name and address of every person thus proposed, with the name of the Member proposing him, shall be published in the next issue of the Magazine. Unless the candidate shall, within two weeks after the publication of his name in the Magazine, be objected to by at least two Members, he shall be deemed to be duly elected. If five Members shall lodge with the Business Secretary objections to any candidate he shall not be elected, but the signatures to the signed objections must be verified by the Scrutineer. If two or more Members (but less than five) shall object to any candidate, the Secretary shall announce in the next number of the Magazine that such objections have been lodged (but shall not disclose the names of the objectors), and shall request the Members to vote upon the question of the election of such candidate. Members shall record their votes in sealed letters addressed to the Scrutineer, and a candidate shall not be elected unless two thirds of the votes recorded be in his favour; nor shall a candidate be elected if five or more votes be recorded against his election.

5.—Each Member shall pay an annual subscription of 10/-, to be due and payable in advance on the 1st of November in each year. New Members shall pay in addition, an entrance fee of 10/6; and, on payment of their entrance fee and subscription, they shall be entitled to receive all the numbers of the Society's Magazine for the current year.

6.—Members intending to resign their membership at the end of the current year of the Society are expected to give notice to the Business Secretary before the first of October, so that their names may not be included in the "List of Members," which shall be published annually in the November number of the Magazine.

7.—The Magazine of the Society shall be issued on or about the first day of every month,* and forwarded, post free, *to all the Members who shall have paid their subscriptions for the year: but no Magazine shall be sent or delivered to any Member until the annual subscription shall have reached the hands of the Business Secretary or the Publishers.* Members whose subscriptions shall not have been paid as above by the first day in September in any year shall cease to be Members of the Society, and shall not be re-admitted until a fresh entrance fee, as well as the annual subscription, shall have been paid.

8.—The Secretaries, Editor, and Treasurer shall be elected for a term of five years, and should a vacancy occur, it may be temporarily filled up by the Executive Committee (see Rule 10). At the expiration of the term of five years in every case, it shall be competent for the Council to nominate the same officer, or another Member, for a further term of five years, unless a second candidate be proposed by not less than twenty-five members of at least two years standing, as set forth below.

In the September number of the Magazine preceding the retirement from office of the Secretaries, Editor, or Treasurer, the Council shall publish the names of those gentlemen whom they have nominated to fill the vacancies thus created; and these gentlemen shall be deemed duly elected unless another candidate or candidates be proposed by not less than fifteen Members of at least two years standing. Such proposal, duly seconded and containing the written consent of the nominee to serve, if elected, in the capacity for which he is proposed, must reach the Business Secretary, on or before the 15th of September.

The Council shall also publish yearly in the September number of the Magazine the names of those gentlemen nominated by them for the posts of Auditor and Scrutineer respectively.

9.—The Members of the Council shall retire by rotation, two at the end of each year of the Society (unless a vacancy or vacancies shall occur otherwise) and two other Members of the Society shall be recommended by the Council to take the place of those retiring. The names of the two Members recommended shall be printed in the September number of *The Avicultural Magazine*. Should the Council's selection be objected to by fifteen or more Members, these shall have power to put forward two other candidates whose names, together with the signatures of no less than

* Owing to the extra pressure of work, the October and November numbers are liable to be late.

fifteen Members proposing them, must reach the Hon. Business Secretary *by the 15th of September*. The names of the four candidates will then be printed on a voting paper and sent to each Member with the October number of the Magazine, and the result of the voting published in the November issue. Should no alternative candidates be put forward, in the manner and by the date above specified, the two candidates recommended by the Council shall be deemed to have been duly elected. In the event of an equality of votes the President shall have a casting vote.

If any Member of the Council does not attend a meeting for two years in succession, the Council shall have power to elect another Member in his place.

10.—Immediately after the election of the Council, that body shall proceed to elect three from its Members (*ex officio* Members not being eligible). These three, together with the Secretaries and Editor, shall form a Committee known as the Executive Committee. Members of the Council shall be asked every year (whether there has been an election of that body or not) if they wish to stand for the Executive, and in any year when the number of candidates exceeds three there shall be an election of the Executive.

The duties of the Executive Committee shall be as follows :

- (i). To sanction all payments to be made on behalf of the Society.
- (ii). In the event of the resignation of any of the officers during the Society's year, to fill temporarily the vacancy until the end of the year. In the case of the office being one which is held for more than one year (*e. g.* Secretaries, Editor, or Treasurer, the appointment shall be confirmed by the Council at its next meeting.
- (iii). To act for the Council in the decision of any other matter that may arise in connection with the business of the Society.

The decision of any matter by the Executive to be settled by a simple majority (five to form a quorum). In the event of a tie on any question, such question shall be forthwith submitted by letter to the Council for their decision.

The Executive shall not have power

- (i). To add to or alter the Rules ;
- (ii). To expel any Member ;
- (iii). To re-elect the Secretaries, Editor, or Treasurer for a second term of office.

It shall not be lawful for the Treasurer to pay any account unless such account be duly initialed by the Executive.

It shall be lawful for the Business Secretary or Editor to pledge the Society's credit for a sum not exceeding £15.

Should a Member wish any matter to be brought before the *Council* direct, such matter should be sent to the Business Secretary with a letter stating that it is to be brought before the Council at their next meeting; otherwise communications will in the first place be brought before the Executive.

A decision of a majority of the Council, or a majority of the Executive endorsed by the Council, shall be final and conclusive in all matters.

11.—The Editor shall have an absolute discretion as to what matter shall be published in the Magazine (subject to the control of the Executive Committee). The Business Secretary and Editor shall respectively refer all matters of doubt and difficulty to the Executive Committee.

12.—The Council (but not a Committee of the Council) shall have power to alter and add to the Rules, from time to time, in any manner they may think fit. Five to form a quorum at any meeting of the Council.

13.—The Council shall have power to expel any Member from the Society at any time without assigning any reason.

14 Neither the Office of Scrutineer nor that of Auditor shall be held for two consecutive years by the same person.

15.—The Scrutineer shall not reveal to any person how any Member shall have voted.

THE SOCIETY'S MEDAL.

R U L E S.

The Medal may be awarded at the discretion of the Committee, to any Member who shall succeed in breeding, in the United Kingdom, any species of bird which shall not be known to have been previously bred in captivity in Great Britain or Ireland. Any Member wishing to obtain the Medal must send a detailed account for publication in the Magazine within about eight weeks from the date of hatching of the young and furnish such evidence of the facts as the Executive Committee may require. The Medal will be awarded only in cases where the young shall live to be old enough to feed themselves, and to be wholly independent of their parents.

The account of the breeding must be reasonably full so as to afford instruction to our Members, and should describe the plumage of the young and *be of value as a permanent record of the nesting and general habits of the species*. These points will have great weight when the question of awarding the Medal is under consideration.

The parents of the young must be the *bonâ fide* property of the breeder. An evasion of this rule, in any form whatever, will not only disqualify the breeder from any claim to a Medal in that particular instance, but will seriously prejudice any other claims he or she may subsequently advance for the breeding of the same or any other species.

In every case the decision of the Committee shall be final.

The Medal will be forwarded to each Member as soon after it shall have been awarded as possible.

The Medal is struck in bronze (but the Committee reserve the right to issue it in *silver* in very special cases), and measures $2\frac{1}{2}$ inches in diameter. It bears on the obverse a representation of two birds with a nest containing eggs, and the words "The Avicultural Society—founded 1894." On the reverse is the following inscription: "Awarded to (*name of recipient*) for rearing the young of (*name of species*), a species not previously bred in captivity in the United Kingdom."

Members to whom Medals have been awarded.

For a list of the Medal awards during the First Series see Vol. II. (*New Series*), p. 18.

For a list of the Medal awards during the New Series see Vol. VI. (*New Series*¹), pp. 20-22
Vol. VII. (*New Series*), p. 20.

SERIES II.

- Vol. VI., p. 257 Mr. W. E. TESCHEMAKER, for breeding the Dwarf
Ground Dove (*Chamaepelia griseola*), in 1908.
- „ „ p. 337 Mr. T. H. NEWMAN, for breeding the Partridge Bronze-
wing Pigeon (*Geophaps scripta*), in 1908.
- „ „ p. 345 Mr. C. BARNBY SMITH, for breeding the Black Francolin
(*Francolinus vulgaris*), in 1908.
- Vol. VII., p. 208 Mr. W. E. TESCHEMAKER, for breeding the Cinnamon
Tree Sparrow (*Passer cinnamomeus*), in 1908.
- „ „ p. 321 Mr. W. E. TESCHEMAKER for breeding the Rufous-backed
Manikin (*Spermestes nigriceps*), in 1909.
- „ „ p. 334 Mr. W. T. PAGE, for breeding the Grey-winged Onzel
(*Merula boulboul*), in 1909.

SERIES III.

- Vol. I., p. 28 Mr. E. J. BROOK, for breeding the Black Lory (*Chalcop-
sittacus aler*), in 1909.
- „ „ p. 81 Mr. W. E. TESCHEMAKER for breeding the Giant Whydah
(*Chera procne*), in 1909.
- „ „ p. 120 Mr. T. H. NEWMAN for breeding the Deceptive Turtle
Dove (*Turtur decipiens*), in 1909.
- „ „ pp. 158 } Mr. T. H. NEWMAN for breeding the White-throated
and 194 } Pigeon (*Columba albigularis*), in 1909.
- „ „ p. 267 Mr. P. W. THORNILEY, for breeding the Argentine Black-
bird (*Turdus fuscater*), in 1910.
- Vol. II., p. 173 Mr. T. H. NEWMAN, for breeding the Snow Pigeon
(*Columba leuconota*), in 1910.
- „ „ p. 269 Mr. DUNCAN PARKER, for breeding the Red-Vented
Blue Bonnet (*Psephotus hæmatorrhous*), in 1911.
- „ „ p. 317 Mr. W. E. TESCHEMAKER, for breeding the Sprosser
(*Danlias philomela*) in 1911.
- „ „ p. 368 Mr. H. D. ASTLEY, for breeding the Orange-headed
Ground Thrush (*Geocichla citrina*), in 1911.



FEMALE WATTLED CRANE AND MALE CANADIAN CRANE
AND HYBRID CHICK.

Avicultural Magazine,

BEING THE JOURNAL OF THE
AVICULTURAL SOCIETY.

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NOVEMBER, 1911.

BREEDING OF THE ♂ CANADIAN AND ♀ WATTLED CRANES.

Grus canadensis.

Grus carunculata.

By R. COSGRAVE.

In 1909 and 1910 these most interesting birds failed to incubate their eggs. This year they were successful in doing so during the last week in April and the first week in May. Nest-making was a very serious business with them; after a good deal of hesitation as to site they settled down in earnest on the grass, about four yards from the pond, and got together a considerable heap of grass, sticks, hay, and any sort of rubbish that happened to be handy.

On May 7th one egg was laid, which was the usual Wattled size but the colour of the Canadian, and to my knowledge no more were added. Taking equal shares both birds at once commenced to incubate the egg—the period was 35 days. We did not take any special care or interest in the nest, just merely left the egg as a natural amusement for the birds.

The young remained on or quite close to the nest for two days and appeared to be very feeble; from the first it was most carefully fed and nursed by both parents, and while one hunted the long grass for insects the other brooded. It began to take artificial food at ten days old; although we gave a good variety of this it preferred the sheep's heart and rabbit's flesh, and was always ready to take it, although the amount of insects taken from the parents was extraordinary—the search for these continued practically all day.

In appearance, the young when hatched differed considerably from any young Cranes that I have seen. The whole body colour was chestnut, leading to cinnamon on the breast and belly; bill, legs, and feet light horn; eyes dark. Instead of the legs being long and awkward to propel, they were quite stumpy; the head and neck were to all appearance two sizes too large which gave the little creature the most absurd top-heavy look. At five days old it was lively and active, following its parents everywhere they went, but it remained stumpy and the same colour for about four weeks, then a great change took place, the head and neck fined down and the bird began to grow fast; particularly noticeable was the remarkable rapidity with which the legs grew. At present (Sept. 23) it leads its father in height by at least three inches. The body plumage is dark grey; primaries and tail black; legs and feet dark horn; head and neck fawn; eyes dark hazel; bill red at base, darkening towards the point. Taking into consideration its size and carriage, although there are no traces of Wattles showing yet, the probabilities are, that it will be like its mother. The photograph shows the young at three weeks old with the parents, whose previous history is worth recording.

The Canadian was bred here in 1899, and is very active and attractive. He likes to show what he can do in dancing, going round and round with both wings expanded, now and again picking up a piece of turf or stick; these he will throw up in the air time after time and occasionally catch them in mid-air. He has a majestic step of his own, and this, combined with his dark grey uniform and red cap, gives one the impression of a youthful military sergeant. However, he is not war-like, we find him peaceful with other Cranes and various birds. On the other hand, Mrs. Wattled likes a good fight and is not particular what with. She arrived here in rather bad health in 1893, and being in fully adult plumage we could not estimate her age. When sufficiently recovered from her journey she was placed in the company of all our other Cranes, and all went well for a few days. Then came a tragedy! she actually killed three very fine Demoiselles and, when discovered, was actually getting on with more. That of course spelt solitary confinement during the

remainder of her natural life. For several years she lived alone in a rather cramped aviary, apparently in the best of health, making a nest and producing usually an egg or two each year. About four years ago her health broke down, and it was quite plain that if she did not have a change of residence her life would be a short one. It was decided to give her a certain amount of liberty once again—but under police supervision so to speak—in a large compartment at the Cranes pond. Here she began to look her former self and commenced to make love to Mr. Canadensis, who happened to want a wife at that time; it was a joyful meeting when he was admitted to her company. Like her mate she is an expert dancer and appears to get excited when laughed at by spectators. Her waltz is quite of an advanced type, she keeping up the swing for several minutes, only stopping to come up to the fence for a word of praise, or if asking, "How is that?" and then starts off again to renew the performance. Since her release from prison her dancing exhibitions have ceased, owing doubtless to the cares of married life.

BIRD CAGES.

By KATHARINE CURREY.

I keep several of my birds in a double set of cages, which involves a little trouble, but they thrive wonderfully well and their intelligence is greatly developed by this mode of life, which, however, would not answer for breeding birds, as they must then be in a stationary aviary or cage.

I will explain as briefly as I can how I manage this. The bird's home is an ordinary large cage that can be lifted about, and in which he has his food and roosting perch under a covered-in end. I have light wooden shelters to cover permanently one end of the cage of all my birds, for it is most cruel not to give them a hiding-place.

In the garden I have large, light movable aviaries screwed or hooked together, and they can be taken to pieces and put away flat against a wall. They are made of small-meshed wire, painted green, and have a door at either end, one door large enough to admit a person. In these aviaries, which are of different sizes

(the largest 5ft. 4in. high to top of gable, 5ft. 4in. long and 2ft. 6in. wide), I place boughs of the trees the birds are partial to, and there are movable perches as well—of wood with the bark on. On the ground (unless it is on a smooth lawn that would be injured) I place logs and stones for insects, beetles, woodlice, worms and slugs to collect under, and move them every two or three days to let the birds catch them. They have a large flower-pot saucer of fresh water to bathe in, and in hot weather I water the aviaries well to have the atmosphere damp. The boughs keep fresh for a few days by placing them in long tins of water hung on to the wire inside the aviary, the water changed every day or two.

Every morning, after cleaning out the cages, I place one of them on the ground against a door of one of the aviaries. Up against the larger door I hang a wire-netting screen on the aviary to fill up the space between the top of the door and the top of the cage; the cage keeps it firm in its place. I open the cage door into the aviary and the bird has a large pleasure-ground to fly in and enjoy himself in all day till sunset, when I merely have to tap with a stick on the aviary and they hop into their home-cage on to the roosting-perch. The advantage of the aviaries being movable is that the birds' pasture-ground can thus be changed, and their position in the garden, on a lawn, or in an orchard, with a warm aspect in winter and a cool shady one in summer, and a sheltered one against March winds. The aviary is easy to lift about and can be placed so as to enclose a little tree or shrub or a tangle on an old stump or bit of rockery, where the birds can have a happy hunting-ground. My birds very soon learnt to understand their mode of life, and clamour to get out every morning, and generally go in to roost of their own accord.

I take them in out of the way of cats, rats, owls or weasels, for I have had some sad experience of leaving them out all night in the aviary. They go out all the year round, in almost all weathers; some birds stand the hardest frost and the coldest winds, if provided with plenty of food and water, but others do not. I have to take in my Rock Thrush (I have had him about fifteen years) whenever there is a cold wind, especially now that

he is old, but he has perfect health and is moulting capitally. In stormy or rainy weather I cover the house-cage with a painted piece of tin. The wild birds come and talk to the aviary birds, and they all sing together. My birds are never ill and live for many years.

With regard to keeping birds in little cages, where they have no room to move their wings, and no protection to retreat to, I have no words to express the horror I feel at such real cruelty, and I consider the caging of Larks fiendish. Among all the wonderful and beautiful works of Creation the bird is almost the most marvellous, and the power of that exquisitely constructed wing destroyed and paralysed in a wired box is the refinement of torture, for a bird that is capable of such intense joy must be equally sensitive to suffering.

I am an enthusiastic aviculturist and my birds are my friends, and for this very reason I feel so strongly about their being treated in a manner wholly antagonistic to their nature and requirements. If anyone wishes to understand something of the miracle of flight in a bird, "The Airy Way," by Mr. Dewar, will illustrate what I mean. The *imprisonment* of birds has been allowed to go on unchecked far too long, and in an enlightened country it should never even be possible. The cottager in the country and the tenement dweller in London has no idea that he is inflicting cruelty on the bird he keeps as a pet in an unprotected cage (*very* rarely sanitary) fed improperly and never allowed a bath. How often have I seen it in villages and country towns, and have bought the poor little half-starved bird to rescue it. And scores of times I have seen it in London,—tiny boxes, in which the bird's feet are so clogged with dirt that his little toes drop off, and he has to peck up his food in the filth in the cage, and to squeeze his neck through the hole in the wire to get the drop of dirty water. The condition of the majority of birds so kept is deplorable, as also their lot in too many bird-dealers' shops. How can it be otherwise if there are many hundreds of birds to tend and keep clean? A small army of cleaners would be required to keep them properly, and an experienced ornithologist to regulate their diet. It is short-sighted policy in a dealer, for he not only injures the stock

he sells but his own health, for dirty cages are thoroughly unhealthy to have in a house. The matter requires very thorough investigation, and as an aviculturist I feel the responsibility of it.

THE NESTING OF THE HAWFINCH.

Coccothraustes vulgaris.

By W. E. TESCHEMAKER, B.A.

The Hawfinch, with its robust physique and iron constitution, has all the appearance of being a bird of the Northland: one might expect to find it in the great Siberian forests in company with the Waxwing and the Pine Grosbeak. As a matter of fact, however, it is found in greatest numbers in Southern Europe, ranging from the Atlantic to the Black Sea; it is rare in Northern Russia and Scandinavia, and in the far East gives place to a subspecies, *C. japonicus*. South of the Mediterranean it is found, though only in small numbers, in Algeria and Tunisia. In Great Britain it nests in every county south of the Border, except Cornwall, hardly ever in Scotland and never in Ireland. Thus we may infer that this species likes a warm climate and a generous diet and has not proved itself very adaptive to other conditions, which is a matter for some surprise seeing that the Grosbeaks, as a family, are able to adapt themselves to almost any climate. For instance of three American species, the Evening Grosbeak, the Rose-breasted Grosbeak and the Yellow-bellied Grosbeak, the first is found in the silent forests of the remote North-west, where the hardy trapper and 'prospector' have never ventured to set foot, the second in the States and the third is a tropical bird.

The Hawfinch is a bird of most irregular distribution and of peculiar roving habits—a wildern creature, rejoicing in its wildness. Here to-day, it is gone to-morrow; one year it will breed in a district in some numbers: the next, not one nest will be found there. As it is to-day, so it has apparently always been. In an old work dealing with the birds of Sussex, as observed during the first half of the last century, I find the following note:—"Of uncertain occurrence, being not unusual during some years and

comparatively rare in others: is generally observed about autumn when haws, cherries and stone fruit are in season. Bred in Stammer Park during the summer of 1847. The young after they had left the nest frequented the neighbourhood of the gardener's cottage and were all caught by his children in brick traps baited with peas." Old and young generally seem to stay in their nesting locality until well on in the winter but, as soon as the food supply becomes scanty, away they go, wandering about the country with others of their race in scattered bands and next year selecting quite a different locality for a summer residence, possibly in deference to the well known principle that one should never repeat a success. One of these flocks, which foraged in the neighbourhood of Paignton during the latter part of last winter, numbered some thirty individuals and was by far the largest gathering of this species that I have ever heard of in this county.

It is unnecessary to give any technical details of plumage because these may be found in any of the bird-books, but one point may be noted in respect of which the bird-books (or some of them) are misleading. I refer to the colour of the beak in the breeding season, which is stated by Howard Saunders to be "leaden blue at the base, dull black at the tip; in winter pale horn-colour." Morris says: "Bluish in summer, the tip dusky." My attention was called to this matter by an exhibitor who came to have a look at my birds one summer. Such is the popularity of Teignmouth as a watering-place that every season a good many aviculturists find themselves in my neighbourhood and frequently give me a look up. (One season I had forty-five visitors besides some who called in my absence). Some of these are members of our Society, some are artisans, and others do not favour me with their names; they come from the unknown and pass away into the unknown. This particular aviculturist bowed himself in and, after introducing his wife, flattered me with the information that he had seen my name in an advertisement. As a general rule my visitors are not specialists and do not cross-examine me very severely, so that I generally come through the ordeal without exposing my ignorance too palpably. But this time I was in the hands of a specialist in British birds

from an exhibition point of view—my weakest point, because I rarely keep birds in cages. I got through the first series of questions fairly well but I felt that disaster was at hand. When we came to the Hawfinches my examiner suddenly said :—"Have you noticed the colour of the beak of a Hawfinch in summer?" I had not; but I plunged, following Saunders, and I was lost. "Quite wrong," said my friend severely, "it is entirely black, and if it is not black the bird is not in breeding condition." Subsequent experience has led me to think that my visitor was right; in the spring the beak becomes black in patches, and later in the season I have seen the beak almost entirely black. Of course the exposure of my ignorance was galling but I was somewhat consoled to find, on my next visit to the Natural History Museum, that the beaks of the pair of birds in the case illustrating the nesting of this species had not been painted black and, when in the Central Hall I came across a clutch of Creeper's eggs with the statement that this species nests "in holes," I felt better.

I quite expect to hear that the Hawfinch has been bred, though I do not myself know of an instance. There are, however, certain difficulties to be overcome. One of these is its remarkable shyness which would probably prevent it from breeding in an aviary not provided with suitable covert. Another is its sullen, savage disposition which has made it unpopular with aviarists. There is a rough and ready method of testing the disposition of any species which I have found very useful and, for a rule of thumb method, singularly accurate, namely, to take the bird in one's hand and try if it will bite. If it bites even a little, watch it very carefully when turned in amongst other birds; if it bites hard, never associate it with other birds. Grosbeaks show remarkable differences of disposition when tested in this way. Not long since I handled half-a-dozen Black-headed Grosbeaks (*H. melanocephalus*) and could not induce one of them even to nibble; subsequent experience has proved the species to be absolutely peaceable despite its large size and formidable beak. But the bite of the Hawfinch is a thing one can never forget—a sort of super-bite: it hangs on like a bull-dog and generally draws blood. And the Hawfinch lives up to its bite. Should any

unfortunate small bird come within reach of its ugly beak, it will assuredly depart with a broken wing or leg and, even when Hawfinches are kept apart from other birds, it is extremely difficult to induce a pair to live together peaceably. The first pair which I kept under these conditions had not been more than a week or two in their aviary before the male killed the female and, when I obtained another female, the latter promptly polished off the male. I released this female and obtained two young birds in the autumn of 1909 which settled down comfortably together but did not breed in the following year, either because they were immature or because they had not yet overcome the constitutional nervousness of their race.

The division in which I have kept my Hawfinches for the past few years is not part of the aviary; it used to be a path surrounding the aviary and in the early days I used to sit and watch the birds from this path but, as I never have time for such luxuries now, I wired it in. It is about 35ft. long, 8ft. wide and 12ft. high. Being just under my bedroom window I am always able to have an early peep at the Hawfinches when desired, which is fortunate because this and the late evening are the only periods of the day when this species shows any activity; with its dipping flight, large size and handsome colouring it is far too conspicuous a bird to go abroad at mid-day.

In mid-March I heard the male singing and this—I may remark—is not a song that is heard every day. It is distinctive though impossible to describe; its shrill whistling call-note is also unlike that of any other bird. An old gardener, of whom I once made enquiries concerning this species, asked me if I meant the bird “which squeaked like a mouse.” After hearing the song of the male I kept a close eye on the Hawfinches, for I said to myself that an amorous Hawfinch would be a thing worth seeing—indeed it seemed hard to imagine that this, the most sullen, taciturn and unsociable of all British finches, ever could flirt. On the 11th April my patience was rewarded. The advances came from the lady who, standing facing the male with drooping wings, commenced to swing her body from side to side uttering a low crooning note and then ventured to gently nibble the tip of the male's beak. The male stolidly stared at his partner and appeared

to be considering whether he ought to submit to such an indignity or whether it would not be more consonant with his dignity to give the amorous maiden one in the eye.

After this my log-book records but little concerning the Hawfinches until the 28th May, when I found that they had pulled up some coarse grass in a corner of their enclosure. On the 29th they carried some of this grass to a fork of a *Pyracanthis* about nine feet from the ground; the male displayed a little, swinging his body to and fro, as a Goldfinch does, and singing. On the 30th, I observed that the female looked queer, and on examining her ladyship more closely came to the conclusion that she meditated laying an egg. This was serious because there was no nest. Apparently they either did not know how to construct one, being as I have said before young birds, or else they considered that it was part of my official duties to provide one. The only two nests that I have seen have been large, flattened structures composed of twigs and roots lined with finer roots and, after several attempts, I produced something distantly resembling this type of nest and fixed it up with wire in the position they had chosen; as the latter was so exposed I surrounded the nest with a screen of cupressus and holly. Having finished my job I retired to a distance to see what the Hawfinches would think of it. It took them a long time to find their way through the screen but, when they did succeed in reaching the nest, their expressions were a study. They stood in solemn silence and gazed at that nest and gazed again; apparently their thoughts were too deep for words. I must admit that it was a somewhat weird structure. However they finally decided to accept it and soon set to work and relined it with green grass—I wonder why.

On the 2nd June the female commenced to sit; she alone incubated and she sat so steadily that I never got a glimpse of the eggs. She was fed on the nest by the male and, if she ever left it, it must have been very early in the morning or at some time when I was not watching. I fixed up a ladder in the adjoining enclosure and, as the latter was loftier than that containing the Hawfinches, I was able to look down on the nest but, even so, I was not able to see the young for several days after they were hatched because the female refused to leave the nest.

I think that the adults must have devoured the egg-shells of which I could not find a trace.

It was not till the 22nd that I obtained a good view of the young which were most singular objects—three fine, healthy nestlings, surrounded by a perfect halo of long white down, with which the dark brown of the dorsal tract and the blackish flights contrasted strongly; they looked rather like young Sparrow-hawks. I was annoyed to see that the nest, which I had fancied so secure, had commenced to sag on one side; owing to the situation selected by the adults it had not the advantage of what engineers call “three-point-suspension.” On the 23rd the combined weight of the adults and young proved too much for the nest, half of which fell right away, but the young with much philosophy, squatting side by side, balanced themselves skilfully on what remained of their home. On the 24th—one of the few wet days of this tropical summer—so little remained of the nest that one squab was compelled to take up a crosswise position on the backs of the other two, and the female, when brooding them, had to sit on the top of this one. This led to a tragedy. On the morning of the 25th I saw the female perched beside the nest whittling away at something. Standing beneath the nest I could see a ghastly, distorted corpse and no sign of the other young. In course of time one becomes hardened to these shocks so, with philosophic calm, I fetched a ladder to bear away my dead. However, matters were not so bad as I had thought; the weight of its superincumbent family had caused the smallest of the young to be impaled on one of the formidable thorns of the *Pyracanthus*, the other two had lost their hold on that part of the nest, which alone remained in situ, and had slipped down on to the collapsed part.

The corpse was so firmly impaled that it required a good pull to dislodge it. This was evidently what the female had been endeavouring to do, and some idea of the strength of her mandibles may be obtained from the fact that she had whittied away quite half of the squab's beak, which was so stout that it would have resisted a blunt knife. The squab weighed exactly one ounce. Its beak (which was very large but more flattened than that of an adult) and legs were pinkish. It was bare on

the lower neck, centre of breast, abdomen and sides; elsewhere it was well covered. The crown and upper back were brown; the rump lighter; axillaries rufous; primaries black. Three of the secondaries were blue-grey on the anterior margins; the prominent white margins of the coverts formed a bar of white on the wing. The breast, flanks and abdomen were buffish-white, many of the feathers being tipped with brown, giving the whole of the underparts a very distinctive mottled appearance. The tail was very short, the three outer rectrices showing white on the inner margins. The mottled feathering and white* ground-colour of the breast made the young very conspicuous, even at a little distance, and here again, as in the case of the Sprosser, I must confess myself unable to see that the nestling plumage can by any possibility be protective.

The young Hawfinches flew on the evening of the 26th, and were so tame that I had no difficulty in inducing them to pose before the camera. After a time, however, they became even wilder than the adults, and when, about six weeks later, I netted and brought them into the house, they severely damaged their heads by dashing against the netting. They were reared on gentles and green peas. Only the small, tender peas were touched but these were consumed in great quantities.

A young bird examined on the 11th August had the two centre rectrices olivaceous, the others white on the inner margins; the primaries, from the fifth to the ninth, had jagged blue tips; the secondaries blue outer margins. The greater and lesser coverts had white margins; the rump was yellowish with darker tips to the feathers; the saddle was dark brown; the head and cheeks yellowish; no black on the throat.

* In a wild state the ground-colour is pale-yellow.—ED.

BREEDING OF THE CORONATED GUINEAFOWL.

Guttera pucherani.

By GERARD H. GURNEY, F.Z.S., M.B.O.U.

My pair of Coronated Guinea-fowls (*G. pucherani*), which I caught and brought home with me from British East Africa in 1908, have nested and reared young this year for the first time. For some time they have had their entire liberty, wandering about where they choose and roosting on the topmost boughs of a tall fir tree, but they are naturally delicate birds and in the winter are run into a dry shed at night, though generally out during the day; they fly down into an enclosure to be fed, and the nest was made in this enclosure, amongst long grass, under a large rhubarb bush, the first egg being laid on June 2nd. The nest was a slightly hollowed out "scrape" in the ground, with a few pieces of bent grass in it, but was entirely hidden from prying eyes by large rhubarb leaves hanging over it. Eleven eggs were laid, generally one each morning, they very much resemble a Domestic Guinea-fowl's egg, but are smaller, paler in colour, and not so much spotted, neither is the shell so hard. The eggs were taken and placed under a hen, the first one hatching on July 14th, another the following day, the remaining nine eggs were unfertile. Only one of the chicks lived, the second one dying two days after it had hatched. The survivor, when four days old, was a beautiful little thing, covered with rich red-brown fluff, the head striped with dark brown and white, underparts lightish.

From the first we fed it almost entirely on fresh ants' eggs, on which it appeared to thrive, eating an enormous quantity every day. When only twelve days old it had developed its wing feathers to an extraordinary degree and was able to fly easily over a wall eight feet high; it presented a most comical appearance at this time, the feathers only just beginning to appear on its breast and neck, its wings looking far too large and developed for its tiny body and a ridiculous little sprouting tail, sticking straight up behind. It grew rapidly during the glorious hot weather we had in August and spent most of its time catching small insects amongst the long grass in its enclosure.

When a month old the blue feathers began to appear and the bare skin on the neck became more distinct, though it was of

a greyish colour, not blue like the adult birds; it also refused to roost any longer with its foster-mother in the sheltered sleeping-place provided, but every night went up on to quite a high bough and spent the night in the open. It is now practically full-grown and nearly as large as its parents. I believe this to be the first time this species has been bred in confinement.

The old hen Guinea-fowl laid six more eggs and began to sit on August 15th. I was determined to see if she would rear them herself, so did not take them away and I have never known any bird sit tighter or better, and on September 8th she was walking about followed by four beautiful chicks.

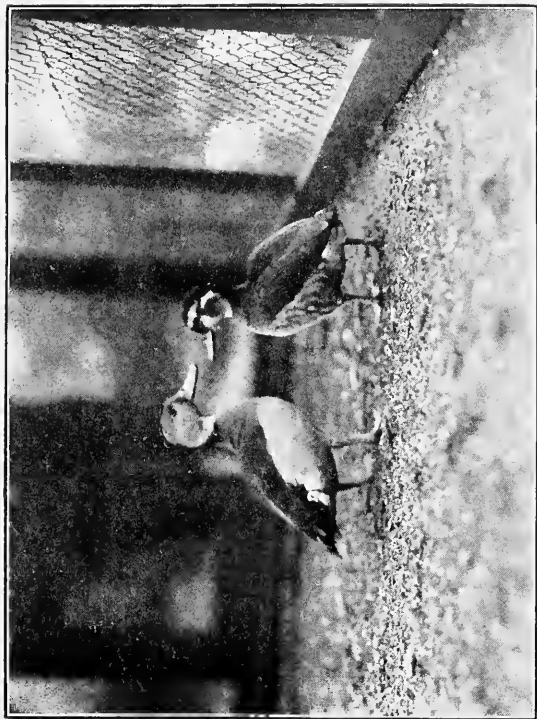
Expecting them to hatch about this date, I had, on the previous day, removed the cock bird, fearing that he might interfere with the young ones; however on going to look at them early the following morning we found that he had flown back over the wall—both the old birds are full-winged—and was brooding the chicks himself. He proved to be a most careful and solicitous parent, more often brooding the young ones than the hen.

Both old birds were very savage, flying furiously at anyone who dare to go too near, and the hen on the slightest approach of a possible danger, would at once collect her chicks under her; but alas, the hot weather changed, and the rain for which everyone, except myself, had been longing, came, and with it a spell of very cold, damp weather, and, one by one, when only three days old, the little Guinea-fowls died off; and although we moved them, with the old ones, into a heated dry house, it was then too late and we lost the lot; their now fully fledged half-brother evincing much curiosity at the little corpses of his brothers and sisters lying on the ground.

BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

By exchange with the New York Zoological Society we have received another consignment of American birds, amongst which may be mentioned a pair of Tawny Thrushes (*Merula tamaulipensis*), a pair of Derby Tyrants (*Pitangus derbianus*) closely allied to the well-known Sulphury Tyrant, and a pair of



RING-NECKED TEAL
(*Nettion torquatum*).

Photo by D. Seth Smith.

West, Newman proc.

Black-breasted Colins or "Bob-whites," (*Colinus pectoralis*). These three are new to the collection. A fine pair of Barred Owls (*Syrnium nebulosum*), four American Barn Owls (*Strix flammea perlata*), four of the northern race of the Burrowing Owl (*Speotyto cunicularia hypogæa*), four Blue Jays, a pair of Golden-winged Woodpeckers and some White-fronted Doves.

The Society has for some time possessed a solitary Victoria Crowned Pigeon, the only example of this fine group. Two more specimens, as well as a pair of the so-called Common Crowned Pigeon have now been acquired, bringing our stock of these magnificent birds up to five, which we hope to increase by breeding next year.

One of the most interesting arrivals consists of a pair of the extremely rare and beautiful Ringed Teal (*Nettion torquatum*) from South America. This is a rare species even in its own country and is new to the Zoological Society's collection and probably to this country. It is something like the Brazilian Teal but much more beautiful, the male having bright chestnut-red scapulars, pale grey flanks, metallic green wing-coverts and a black band passing from the top of the head down the nape and dividing into a collar round the neck. A few males of this species reached the Berlin Gardens some few years ago but there were no females.

CORRESPONDENCE, NOTES, ETC.

MORE NESTING OF QUEEN ALEXANDRA PARRAKEETS.

SIR,—I have to record another failure. To-day—the 30th of August—I have looked into a nesting-box in which another of my hen Queen Alexandra Parrakeets had been sitting on three eggs for three weeks, only to find one egg addled, one scratched out of the hollow in which it was laid and quite cold, and the third squashed and half open with a young bird inside it ready to hatch, but dead. The hen bird is a bad mother, and I suspect her of eating her eggs, for I found some chewed shells in addition to the three eggs. She has had two former clutches this year, and in each case the eggs had holes eaten in them; yet she sat well, and the same male—which was the father of the fortnight old bird by another hen—fed her and mated with her.

HUBERT D. ASTLEY.

REVIEWS.

NORTH'S "NESTS AND EGGS." *

One of the most useful features of Mr. North's book (of which we have just received Part II. of Vol. III.) is the inclusion, not only of a description of the nidification of the species, but its life history, hence it is of the utmost interest and value to all students of the avifauna of the Island Continent. It is, however, unfortunate that those species whose nesting habits are unknown are entirely omitted from the work, hence we have no mention of such species of the Genus *Psephotus* as *P. chrysopterygius* or of Mr. North's excellent species *P. cucullatus*. The part just issued concludes the Order Psittaci, and treats of several of the Cockatoos and of those most delightful Parrakeets which are not surpassed by any in their popularity with aviculturists.

It is strange that Australian ornithologists will persist in calling so many of the true Parrakeets "Lories," a name that is almost as absurd when applied to *Plistes* or *Aprosmictus* as it is when used for the African 'Touracous. Inappropriate popular names will, however, probably continue to be applied until the end of time, even if ornithologists agree to use only those that have a sensible meaning.

A remarkable and most regrettable fact about some of the most beautiful Parrakeets is that they are rapidly becoming extremely scarce, though only a few years ago they were numerous. During the present writer's stay in Australia he made many inquiries as to the present whereabouts of the Turquoise (*Neophema pulchella*) with the result that nobody could give any satisfactory information. The bird had been plentiful twenty years ago and less, but for years no individual had been heard of. Mr. North fully corroborates the opinion then arrived at that this beautiful species is now on the verge of extinction. No specimen has been received or heard of since 1885, though a few years before that the species was common a few miles from Sydney.

The beautiful scarlet-chested Splendid Parrakeet (*Neophema splendida*) which has been imported to England many years ago,

* *Nests and Eggs of Birds found breeding in Australia and Tasmania.* By ALFRED J. NORTH, C.M.Z.S. Vol. III. Part II. Sydney: F. W. WHITE, 344, Kent Street.

is regarded as the rarest of the genus *Neophema*. It seems to be unknown in Western Australia at the present time, though the type was procured there. But this species has always been rare, and possibly it is not scarcer now than formerly.

Notes from various correspondents on the nesting habits of the species naturally form the bulk of the matter contained in this book, and deeply interesting they are. D. S-S.

THE GIZA ZOOLOGICAL GARDENS.*

The Report of the Giza Zoological Gardens for the year 1910, being compiled on the lines of the previous reports, enables the reader to see at a glance how the year compares with previous years. We note that the number of visitors shows an increase of over 19,000 pointing to the continued and increasing interest taken by the inhabitants of Cairo. The number of animals, birds and reptiles in the Gardens at the time of the annual stock-taking was 1464, representing 391 species, and is the largest number that have hitherto been on exhibition.

Among the birds the more notable additions during the year were six White-headed Oxbirds (*D. dinemelli*), three Bifasciated Larks (*A. alaudipes*) and two Red-billed Hornbills (*L. erythrorhynchus*), one Savigny's Bearded Vulture (*Gypaëtus barbatus ossifragus*), three Crowned Sandgrouse (*P. coronatus*), none of which, except the Bearded Vulture and Hornbills, have been on exhibition in the London Gardens. The number of species of birds bred in the Gardens was not very great; the most important being two Crowned Pigeons (*G. coronata*) and two Senegal Stone Curlews (*Ædicnemus senegallus*), and we fancy this is the first time that any Stone Curlew has successfully reared its young in captivity. The Griffon Vultures and the Lark-heeled Cuckoo (*Centropus*) laid eggs but failed to hatch them.

The Report also includes many interesting details respecting the food and the expenses, as well as a list of scientific papers concerning the collection, which have been published by various authors during the year.

On reading the Report one cannot help being struck by

* Zoological Gardens, Giza; Report for the year 1910, by the DIRECTOR.
Cairo: National Printing Department.

the thoroughness with which Capt. Flower and his able assistant Mr. Nicoll undertake their duties, for not only does the comparatively slight percentage of losses show the care bestowed on the animals themselves, but the list of publications in connection with the Gardens by the staff or others proves that the scientific side is not forgotten, and this without in any way detracting from the Gardens as a popular resort, as shown by the increase in the number of visitors.

"BRITISH BIRDS."*

"British Birds" contains as usual a large number of notes of interest to those whose special study is our native birds. In the four numbers under review the article of greatest interest is that of Miss Turner on the nesting of the Bittern in Norfolk during the past summer. This marsh-loving bird has not nested in this country since 1886, while the last nest of what may be termed the original stock was found in 1868. On this occasion we are glad to say the birds successfully reared their young, photos of which and of the nest are given. Early in August they left their breeding quarters and we must hope for their return next year. Other articles deal with the late Mr. Robert Service, the Recovery of Marked Birds and numerous short notes, which we have no space to notice in detail.

Publications received: B.O.C. Migration Report for 1910; *The Emu*, April and July; *L'age des Perdrix*, by Dr. Louis Bureau; *Life of the Common Gull* by C. Rubow.

THE SOCIETY'S MEDAL.

We much regret that an unfortunate mistake was made in awarding Mr. Astley a medal for breeding the Cuban Bobwhite. Mr. Astley's birds were reared under a Bantam, and are, therefore, not eligible for the medal. Mr. Astley, however, is apparently entitled to a medal for rearing the Rose-breasted Grosbeak (*Hedymeles ludovicianus*) as described in the last volume, pp. 333 and 370.

Mr. Teschemaker is also apparently entitled to a medal for breeding

* "British Birds." July, August, September and October. Monthly, 1/-
London: WITHERBY & Co.

the Hawfinch (*Coccothraustes vulgaris*), the article on which appears in this number.

If any Member knows of any previous instance of either of these species having been bred in this country will he kindly communicate with the Hon. Sec.

PRACTICAL BIRD-KEEPING.

IX.—LIVING FOOD FOR INSECTIVOROUS BIRDS.

By DR. A. G. BUTLER.

All aviculturists who have attempted to breed insect-eating birds have spoken of the difficulty of obtaining a sufficient quantity of suitable food for this purpose: this is partly due to want of knowledge of those insects, their larvæ, or pupæ, which are suitable for the purpose; partly to ignorance of the best methods of obtaining these in abundance. I therefore propose in the present paper to indicate first what kinds to select and then to explain how they can be acquired.

Spiders are not true insects, but all of them are much sought after by insectivorous birds and are greedily devoured: they are moreover the best medicine for ailing birds and have saved the lives of not a few of my pets when they were too ill to be tempted by any other food. Four or five of the common garden spider (*Epeira diademata*), or failing these two or three examples of a common greenhouse spider (*Tegenaria atrica*), or even the repulsive looking house-spider (*T. domestica*) with its wide spread of legs will speedily restore a sickly bird to health and activity.

Birds have not the slightest fear of spiders, but rush upon them with the greatest eagerness as soon as they are offered, even that ugly little beast (*Dysdera cambridgei*) being most attractive to avian taste. Harvest-spiders (*Phalangidea*) are also accepted, although not with the same enthusiastic pleasure.

When one considers that the food of spiders consists entirely of insects, one can understand that when eating an Arachnid a bird gets insect-food in a concentrated form; therefore, although I was scoffed at some years ago for speaking of spiders as a sort of bird's Bovril, I don't think the comparison was in the least degree a ridiculous one.

Of the Myriopoda, which also are not insects, the centipedes are eaten with avidity, but the millipedes are refused. The broad centipede (*Lithobius forficatus*) is sometimes met with when separating a cask of flower-pots for greenhouse work, but these little animals are not so abundant as to be of great importance to the aviculturist; nevertheless they should not be thrown away when much food is needed for rearing young birds.

Of the *Thysanura* the abundant little so-called "Silver-fish" (*Lepisma*) may often be obtained in abundance under boxes or tins or even in the mealworm-pan, and though it is so active and brittle that it cannot well be picked up and offered to a bird, it may be brushed into a basin and the latter placed in an aviary when the whole collection will speedily be devoured.

Mayflies (*Ephemeridæ*) and caddis-worms (*Phryganeidæ*) are, as is well-known, favourite food for all insect-eating creatures, the latter can be obtained in a dried form from Germany and from some of the English dealers, but in this case they must be scalded before they can be used as they are very hard when received in their tinned form. The smaller Dragon flies are eaten, but are not easily obtained in quantity.

Termites or so-called White-ants would be excellent food for our pets if we could only get them preserved in quantities: they are one of the plagues of tropical countries and could easily be collected and dried for importation as bird-food, but nobody seems to have had sufficient enterprise to make use of them. Earwigs (*Euplexoptera*) are well known to be acceptable and these can easily be obtained in the autumn, by crumpling up paper and ramming it into a flower-pot inverted over the sticks or stakes used as supports for Delphiniums, Dahlias, &c. Remove the pots to an aviary or large cage and open the paper, when the insects will drop out in numbers and form a pleasing variety in the dietary of your insectivores.

The Orthoptera generally are acceptable to birds, but in this country few can be secured even in fair quantities; perhaps grasshoppers are most numerous, but only in certain districts, while crickets seem only to abound in the kitchens of old houses: yet why locusts, which are a plague in the tropics, are not dried, deprived of their legs, heads, and wings, and ground into meal

as food for cage-birds, is a mystery: surely they would pay for importation. In meadows of long grass where grasshoppers occur, they might be swept up with a butterfly-net, emptied into glass bottles, and turned out for the delectation of an aviary of insectivorous birds. This reminds me of the value of the entomological sweeping net, of canvas on an iron ring, for collecting quantities of small insects, their larvæ, and spiders, from weed-filled ditches and hedgerows: sweeping the herbage with a net of this kind one secures a vast store of insect-life in a very short time; and, for Warblers and other small birds, a collection of this kind is invaluable.

The Cockroaches (*Blattariæ*) are excellent food for all insectivorous birds, although some birds will only accept them in the very young larval stage; the commonest form *Periplaneta americana* may be easily captured in hundreds with the ordinary so-called beetle-trap. In Madagascar a gigantic species is common and if imported and bred in a greenhouse would doubtless be most useful for feeding the larger species such as Mynahs, Bower-birds, Crows, &c. It is a most curious insect with feet padded like those of a cat, for which reason I gave it the generic name *Æluropoda*; the largest specimens are from 69 to 73 millimetres in length, and 31 to 34 millimetres in width at the widest part of the body, or the size of a tolerably large mouse.

The plant-bugs, with the exception of the Aphides (green-fly) are not generally much liked by birds, but there are exceptions, as in the case of the so-called Water-boatmen (*Corisidæ*) of which vast quantities are imported from Mexico under the name of "dried flies" and form an ingredient in all the best insectivorous mixtures put upon the market. I believe these insects are chiefly caught when flying over the water in the evening in dense clouds; but the presence of small fish among them shows that they are followed by the net even after their return to their native element. It is probable, I think, that *Cicadas* would also be acceptable to birds, but I have had no opportunity of testing this: the *Membracidæ* to which family our cuckoo-spit (frog-hopper in its adult form) belongs, are certainly eaten when offered, and I believe that some birds will even eat mealy-bugs (*Coccidæ*).

As already stated, the smaller Dragon-flies are relished and doubtless the larger forms, when they can be captured, are also devoured by the more powerful insectivores; most Neuropterous insects are probably suitable for food, but I should think the lace-winged fly (*Chrysopa*) with its slow fluttering flight, metallic golden eyes, and most offensive smell would be an exception, which is just as well, seeing that its larva subsists entirely upon plant-lice.

Of all insects, probably the Lepidoptera (Butterflies and Moths) are most appreciated by birds, as caterpillars, chrysalides, and perfect insects, but to this general rule there are numerous exceptions of which, in the case of the more abundant species, it may be well to indicate a few:—Spiny caterpillars, like those of the *Vanessæ*, as for instance those of the Peacock Butterfly and the small Tortoiseshell (which abound on stinging-nettles) are naturally regarded as objectionable, but their more or less metallic chrysalides are eaten, as also are the perfect insects. I however object to destroying these beautiful and useful butterflies when abundance of the far commoner and noxious white butterflies:—*Ganoris brassicæ*, *rapæ*, and *napi* can always be captured with ease in our gardens after they have settled for the night upon white flowers or pale leaves. I often go round my garden in the evening and pick up quite a number of these (the only really mischievous butterflies which we have and the least beautiful) and give them to my Hangnests and other birds which will accept them. This year, when our wild birds have been hard put to it to find sufficient food out of doors, I have frequently seen Sparrows hunting down these butterflies, snipping off their wings and eating the bodies.

Hairy caterpillars like those of the Tiger and Ermine Moths (*Arctiidae*) are not generally accepted, although the Crows, typical Thrushes and Cuckoos will eat them, the two first rubbing them backwards and forwards first to remove the hair, but the larvæ of the Buff-tip moth (*Pygæra bucephala*) which often is so abundant that it strips limes and shallows of their foliage is rejected by all excepting our Cuckoo, which eats it with avidity.

Many of the larger and commoner stick-caterpillars (*Geometridæ*) are refused; not, I believe, on account of their

resemblance to pieces of twig, nor because they are unpleasant to the taste, although the latter may partly explain the rejection by some birds of the caterpillar of the Swallow-tailed moth (*Uraapteryx sambucaria*) when it has been feeding upon Irish ivy, but rather because they are extremely tough. I have seen some of my birds trying to break up caterpillars of this character for a considerable time and giving it up in the end as hopeless; only birds with powerful bills are successful. The black caterpillar of the Brindled beauty (*Biston hirtaria*), by no means a pretty moth by the way, is easily collected from the trunks of lime-trees, but is one of the toughest of its kind. On the other hand the little caterpillars of the V.-moth (*Halia vanaria*) a gooseberry pest, are a favourite food of the Titmice; indeed I once watched a Blue-tit for quite half an hour feeding its young upon these caterpillars alone: on the other hand the spotted larvæ of the common Gooseberry-moth (*Abraxas grossulariata*) are rejected with disgust by most birds, as well as by lizards, frogs, and spiders, although Mr. Page says that he has seen his Weavers eating them: the chrysalides of the same moth, with their wasp-like colouring are also generally refused, but the moths are occasionally accepted and my male Blue-bird was very fond of them. In like manner the caterpillars of the large white butterfly (*Ganoris brassicæ*) are generally refused, but the chrysalides and perfect insects devoured without hesitation. Size does not seem to alarm birds, for a Blue-tit in one of my aviaries captured in the air a full-sized female of the Poplar hawk-moth (*Smerinthus populi*) tore off the wings and carried it to a perch to eat it; neither does the so-called terrifying attitude of certain caterpillars of hawk-moths seem to affect the nerves of birds to the slightest extent. The caterpillars of the Puss-moth, common on willows and poplars, is approached with caution by all birds excepting the Tits, which are familiar with it and recognize it as providing an excellent meal; undoubtedly its very bizarre shape and colouring and the existence of two tentacles on the last segment from which it can eject an acid liquid renders most birds wary of it.

No doubt a cabbage-field is the best place in which to seek for edible caterpillars, those of the common Cabbage-moth (*Mamestra brassicæ*) in various shades of green and brown, some

of the *Apameas* and the velvety green catterpillar of the small White butterfly (*Ganoris rapæ*) being always in evidence.

Caterpillars of the Dot-moth (*Mamestra persicariæ*) common on the fronds of the well known male and female ferns are always greatly relished; they vary in ground-tint from lavender greyish, through chocolate and clay-colour to green, but may always be recognized by the dark crescentic markings on the anterior segments.

Wood-boring caterpillars are not generally liked, although the larger Thrush-like birds and probably the Crows will eat them; they, however, render the cage offensive for some time afterwards: they should prove excellent food for Black Cockatoos, since the latter eat them in Australia with relish. The perfect insect of the Wood-leopard moth (*Zenzera æsculi*) is more often than not refused by birds, I think because of its rather startling coloration reminding one a little of a Pierrot; but all the small brown night-moths as well as the more or less metallic *Plusiæ* including the Burnished-brass moth are accepted at once.

The languid white caterpillars of some of the Ghost-moths (*Hepialidæ*), which I have found in quantities feeding on the roots when removing Peonies from one part of my garden to another, are very much relished by all insectivorous birds.

The leaf-rolling larvæ of Pearl-moths (*Pyrallides*) are always eaten, as are those of the more typical Micro-Lepidoptera the *Tortrices* and *Tineina*, including even those of the common clothes-moths.

Most two-winged flies (*Diptera*) are devoured in all their stages and it is well known that maggots of the common blue-bottle fly are well worth breeding in meat and, after scouring by keeping for a day or so in sand, form excellent food for rearing young birds. It might be supposed that Sun-flies, Rat-tailed flies and Bee-flies from their more or less near resemblance to wasps, honey-bees, and humble-bees, would be refused, but in the case of the two first at any rate this is not the case, though it is a sin to destroy the first (the larvæ of which destroy plant-lice) while the last, which fly like Humming-birds, are not easily captured: but Rat-tailed flies (*Eristalis tenax*) are easily picked

off Michaelmas daisies and, in spite of their angry buzzing, are taken at once from the fingers and eaten.

By far the greater number of the beetles (*Coleoptera*) may be given to birds, but the common Stag-beetle (*Lucanus cervus*) which, when approached by a bird throws itself into an attitude of defence, raising itself on its front legs and holding its powerful mandibles wide open, makes its opponent very cautious; I think any of the Crows would be able to master it, but a Thrush seems only able to fling it on its back and then cannot break through its horny covering. The Soldier and Sailor beetles (*Telephoridæ*) are not relished by birds, nor are the tiny metallic blue Cabbage beetles (*Phædon brassicæ*) of which I once had several ounces sent to me to test my birds with; these beetles have a strong sour smell like red ink and I did not wonder at their rejection. Bloody-nosed beetles and Oil-beetles would also probably prove equally objectionable. Larvæ of Cockchafers are eaten, but they make a disgusting mess of a cage in which they are broken up.

Although some of the *Carabidæ* such as *Carabus violaceus* have a most offensive odour, and on that account would probably be generally refused in the beetle stage, their larvæ, obtained when digging up the earth, are greedily accepted, and I found them most useful when my young Ouzels were being reared. *Pterostichus madidus*, though a hard-shelled beetle, is eaten by some of the larger birds.

The smaller Rove-beetles (*Staphylinidæ*) are, I should think, generally accepted; but it would need a strong bird to tackle the Devil's Coach-horse (*Staphylinus olens*) which always curls up its tail and opens its jaws when touched, a *really* terrifying attitude, and I should not expect it to be a tasty morsel.

The larvæ of Spring-back beetles (*Elatерidæ*), which somewhat resemble mealworms and are generally known as wireworms, are much liked by all insectivorous birds; as of course are the true mealworms (*Tenebrio*) of the family (*Tenebrionidæ*), and the hairy larvæ of the Bacon-beetle (*Dermestes lardarius*) of the family *Dermestidæ* the perfect insect being also eaten with pleasure.

Of the four-winged flies (*Hymenoptera*) I do not think birds

have any instinctive dread, for we know that, in tropical countries, many weak species build their nests, for protective purposes, close to the nests of the most virulent wasps; still the number of birds which feed upon bees and wasps is limited; although the grubs of all wasps are recognized as excellent food for rearing young birds; the Laughing Thrushes after breaking the stings against their stiff tail-feathers eat wasps with impunity, while the Bee-eaters probably crush the bodies in their bills before swallowing examples of *Hymenoptera*, but most insectivorous birds leave these insects severely alone, and this should cause our friends who make too much of mimetic resemblance to pause before they assume that a wasp-like or bee-like aspect in another insect is invariably a protection, when we who keep birds know that it is nothing of the kind; it may be some protection against a bird which is not hungry, but not against one which is pressed for food: a hungry bird investigates closely.

Ants are well-known to be excellent food, both in the pupal and perfect stage, and nests of the red ant (*Formica rufa*) common in many woods, may be removed entire in a sack for the benefit of the inhabitants of a large outdoor aviary.

Sawflies (*Tenthredinidæ*) are generally rejected by birds in all stages, although their larvæ much resemble those of Lepidopterous insects; they have, however, the front segments rather more swollen and the cocoons are tough and paper-like as a general rule.

The smaller Crustacea and Mollusca are well known to be a favourite diet with many soft-feeders, also, of course, earthworms; the latter should always be offered to all Thrush-like birds when nesting, as they are easily obtained in quantity and with very little trouble as a general rule.

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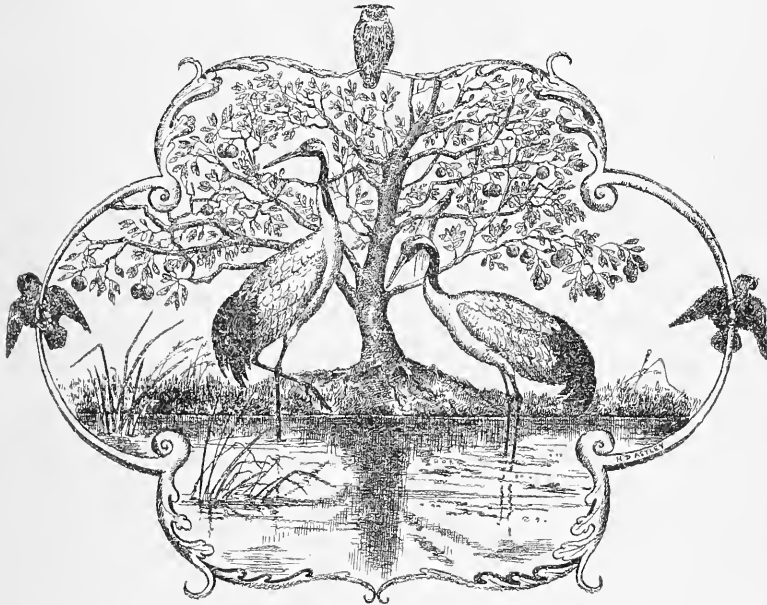
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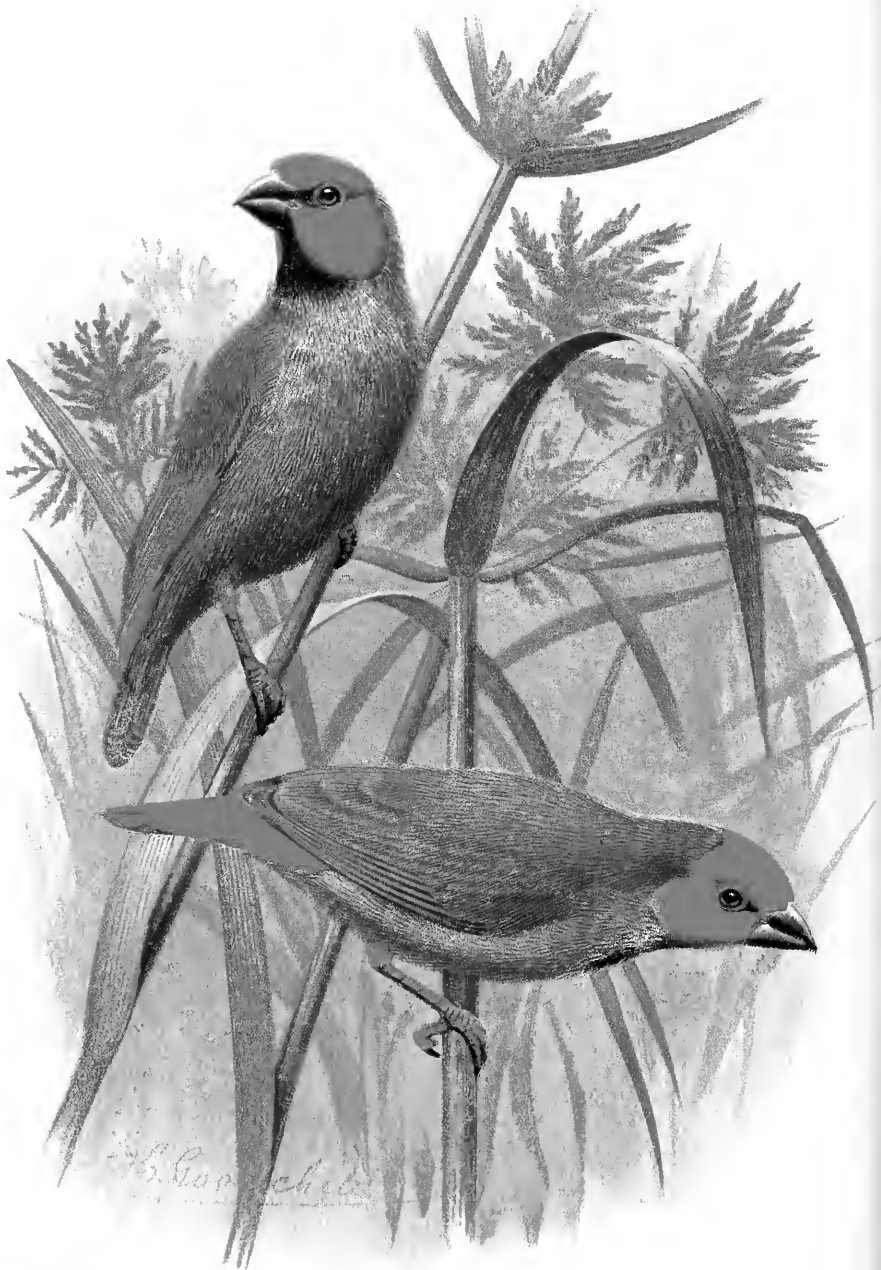
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DECEMBER, 1911.

NOTES ON SOME FIJIAN BIRDS IN CAPTIVITY.

By PHILIP H. BAHR, M.A., M.B., F.Z.S., M.B.O.U.

The following is a short account of some experiences with a limited number of native birds during a fifteen months stay in the Fiji.

Several species were successfully brought home to England, amongst which the finch (*Erythrura pealei*), the lory (*Calliptilus solitarius*) and the parroquet (*Pyrhulopsis taviensis*) are, I believe, the first to be brought to this country alive.

Fiji is but poorly supplied with bright-coloured birds, and in this respect the subject of the accompanying plate, so admirably executed by Mr. Goodchild, affords an exception.

The Parrot, Peale's, or Fire-tailed Finch is the proud possessor of a native name, Qigi (pronounced NG-GHI-NG-GHI), a term which appears to be applied loosely by the Fijians to any small bird, but to this species in particular.

It is a curious fact that the Fijian knows nothing or cares little for any bird; the paucity of native names testifies to this fact; consequently but little assistance can be gained from natives by those anxious to collect or trap birds.

The plumage of these birds is an admixture of blue, green and red, a livery also adopted by the two more familiar species of parrot, (*Pyrhulopsis splendens* and *Calliptilus solitarius*), peculiar to these islands.

The Fiji group comprises nearly 250 islands of all sizes in many of which the physical conditions are extremely variable. This finch confines its range to the three largest, Viti Levu, Vanua Levu and Taveuni; on the first-named island it is an

extremely common and familiar bird, and its numbers do not appear to have suffered from the attentions of the Mongoose which is responsible for the extinction of many forms of life on the islands to which it was introduced some twenty-five years ago.

It is a familiar species, frequenting the gardens of the European residents, to whom it is known as the Croton Finch from its partiality to those bushes.

In their natural state it feeds to a great extent on grass seeds, especially a most pernicious kind, well known to every inhabitant of these islands. This seed is provided with a long terminal spine which works its way into every article of clothing and constitutes one of the curses of the colony. In the months of March and April they frequent the rice fields, tilled by the imported Indian coolies, and are then said to be caught in great numbers.

During my stay in these islands, however, it had always been my intention to procure as large a number of these birds as possible. One day an Indian brought six of these birds in a basket and offered them for sale. They had evidently been starved for some time and a few died almost immediately. One survived, and him we used as a call bird with some considerable success. In the absence of any other practical means a sparrow trap was erected, consisting of the baby's bath propped up with a stick, under which seed was spread, and our captive was placed in an improvised cage alongside as a lure; a string was then run from the prop of the trap to some handy window in the bungalow. By these simple means we soon caught a few more; the bath, however, proved unsatisfactory in many ways, and was replaced by a more serviceable wooden framework covered with fine mesh wire and provided with a door at one side through which the prisoner could be with safety abstracted. This proved a great success, and, during the months of September and October, the bag was swelled by additions of two, and sometimes three or more Finches every day; my wife becoming an adept at working the trap.

During this time the greater number were young birds accompanying their parents in family parties; they were un-

suspicious and were consequently easy to capture. The plumage of these young birds is uniformly green, with a small spot of red colouring situated at the base of the bill—on one occasion three were caught in the trap at once.

During the months of December and January they were in full moult, this being the period of hot weather, and in these months we had no success.

When the time came to return we had no less than forty of these birds. They thrive well in a roomy cage made out of old packing cases. Travelling viâ Sydney and Colombo (an eight-weeks journey) no less than twenty-one arrived safely in this country; the only ones lost were drowned in a great storm in the Bay of Biscay, during which the cage broke loose from its moorings and a large wave swept the deck.

Turned into an outside flight in the middle of April they thrive exceedingly; they seemed to have considerable difficulty in completing their moult which had commenced at sea; however, in June they were in good condition and had commenced nesting operations.

In addition to boxes, many old straw hats, the crowns of which had been perforated by holes of various sizes, were fixed up; a similar plan having proved successful with the new Caledonian Parrot Finch in the hands of Mr. Seth-Smith.

During August vigorous pairing was noted. The cock bird then utters a peculiarly silvery drawn-out note and chases the female, until quite exhausted she submits to his attentions. A number of nests were built, some in hats and boxes, but others in trees and bushes placed in the aviary for this purpose. The nests in the boxes were domed and built of grass and dead leaves and lined with feathers, those in the bushes were frail open structures.

On entering the aviary in October to catch up the birds for the winter, I noticed with great regret that the nests appeared to have been ransacked by mice, which had obtained entrance through cracks in the ground consequent on the summer drought. The birds are now in magnificent condition and are undergoing a partial moult of the red head-feathers. There is, however, one specimen whose head remains a peculiar greenish-blue colour.

They appear to have become thoroughly acclimatized and feel the cold very little. Their food in captivity consists solely of millet seed, and they require plenty of water for drinking and bathing.

Calliptilus solitarius, the Fijian Lory, the "Kula" of the natives, and no doubt mis-named *solitarius*, because it is always seen in parties, and never singly, flying and screaming about the cocoanut palms. In Mongooseland it is becoming extremely rare and confines its range to belts of high trees and low lying swampy places, where it is free from the attentions of this predacious little animal.

It is extremely abundant in some of the smaller islands, notably Kadavu and Taveuni. Possessed of the most magnificent plumage of scarlet and green with an erectile Elizabethian ruff, it has every quality of becoming a charming pet.

On enquiry I learned that no success had attained any efforts to keep them in captivity. They were said to become very tame, but that they never lived long and died in convulsions without any previous warning. The diet recommended was mummy apple (pawpaw), honey or sugar water. In their wild state they appear to feed mostly on the flowers of the cocoa-nut palm. I quite despaired of procuring any to experiment with. No one in the colony had any for sale; advertisements in the local papers and appeals to the natives were unattended by any success. In November I despatched my native assistant "Jesse" to his own island to see what he could do. He brought back three young specimens of *Pyrhulopsis splendens*, and one adult "Kula," which the natives had caught as it emerged from its nesting-hole. This was a magnificent specimen, but it entirely refused to feed in captivity.

On a visit to the island of Taveuni in Dec., 1910, I was more fortunate; one of the planters there is an ardent aviculturist and knew of a number of nesting-holes of this species. He had, however, not had much success himself with this species in captivity. These holes were situated low down in dead stumps which had been left in his cocoa-nut plantation. An opening had been cut away opposite the nest and cleverly closed up with stones. This site was, in the majority of cases, on a level



THE FIJI LORY
(*Calliptilus solitarius*).

Photo by P. H. Bahr.

West Newman proc.

with the ground thus explaining, in all probability, the ease with which the Kula becomes wiped out by the Mongoose in other localities. In one such nest we found a young bird partially feathered $2\frac{1}{2}$ inches long. Though undoubtedly too young to be removed, I attempted to rear it.

Nests are said to be very hard to find, as the old birds are very wary about entering any hole while under observation. At finding nests, natives are much more expert than white men. Another bird, almost fledged, was brought in by a party of Solomon Island labourers which had been sent out for the purpose. At first I attempted to rear these young birds on honey, but they did not take very kindly to it. One of them, however, on being placed on the breakfast table, made a bee line for the porridge and commenced feeding on it with great alacrity with his brush-like tongue. Tea with sugar and milk he absolutely could not resist, though milk and sugar alone or Nestle's milk he was not at all partial to. Henceforward the younger bird was fed by means of a spoon on sweetened tea and milk, and became very fat and grew rapidly; porridge and gruel he would not or could not take. The older bird became extraordinarily tame and familiar and never attempted to fly away.

Subsequently five more young birds were brought in by a Fijian; they were half-starved and were being fed on mummy apple, which did not agree with them. So infested were they with white mites that I also became covered with these creatures whose bites caused considerable inconvenience. Frequent baths with dilute lysol effectually cleansed the birds of these parasites. Though the weather was very warm they required a considerable amount of extra heat; the youngest bird especially was never so happy as when placed in the incubator at 97° Fahr. Of the new arrivals I lost one, which vomited all food and died in convulsions. The others lived in a large cage and became very tame and familiar. They were always lively and cheery, tumbling about the floor quarrelling like monkeys and greeting others of their kind with shrill cries as they winged their way over our house.

The youngest of the family came to a sad end. I had had him for over a month and he had then become completely fledged. One day, in its anxiety to reach the others, he fell out of the

cigar box, which was his home, on to the floor, a distance of some four feet. The fall seemed to knock all the breath out of his body, his legs became paralysed and useless. He vomited all food, but recovered temporarily and lingered on for another week. I was greatly distressed at losing this bird after having succeeded in rearing him from such an early stage.

I was told I should have considerable difficulty in bringing these birds home *viâ* Canada in March. The hot weather was reigning when I left Fiji. The five "Kulas" were placed in a cage in the stern of the ship under cover. For the first week all went well and they seemed to enjoy the ship's porridge and ship's milk. One morning, after having crossed the line, and when still three days from Honolulu, no less than four were seized with cramp in their feet and one died in convulsions. There was no heating on board ship and indeed the weather was quite warm enough. They were taken into the cabin and placed in a drawer where they huddled together for warmth.

After Honolulu a great storm arose and lasted three days, during which I feared I should loose all my birds. I only managed to save them by placing the four survivors in a small box and taking them to bed with me to keep them warm. An electric radiator was provided in the saloon, and by placing them in front of this in the day time I managed to reach Vancouver with three, another having died suddenly in convulsions. These three, two with their feet hopelessly cramped, I managed to snuggle across the Canadian Pacific. Though the temperature outside registered twenty degrees of frost, they kept warm over the steam-heating apparatus, and one recovered from the cramp during the journey.

On the *Lusitania* a steam-heated room with a temperature of 70° Fahr. was provided, where they felt themselves quite at home, but one more invalid died soon after reaching this country. The two survivors have now assumed magnificent adult plumage, with an outstanding ruff of red and green. Their beaks, which at first were brown, became bright yellow when three months of age. In May they underwent a partial moult of the head and breast feathers and a complete moult in August (*i.e.* when eight months old). All summer they have been kept in a large cage in the house, and on warm days in the open.

They feed now almost exclusively on porridge, though they are very partial to fruit, especially grapes, apples and cherries. They partake of a warm bath daily and are extremely lively. During the colder weather we are now experiencing I find that they require to be placed in a warm cupboard at night. So far they have shown no desire of breeding though they have the appearance of being a pair. They are indeed fascinating pets and would doubtless become very popular could they be successfully transported to this country. The pair have been deposited in the Zoological Gardens, and may be seen in the parrot-house.

Of the larger parrots, I successfully kept in captivity the following species:—*Pyrrhulopsis splendens*, *P. personatus*, *P. taviuensis* and *P. tabuensis*.

Of *P. splendens* I had three specimens from the island of Kadava. On the larger islands they are now very rare and are confined to the hill tops, having fallen an easy prey to the Mongoose. My birds were nestlings and never became tame. Travelling viâ Australia they landed in this country in full moult, one unfortunately broke a leg in the train during transportation from Tilbury. The weather being warm at the time I turned them out in an outside aviary, when they apparently throve well for about two months, but in June they all died in convulsions within a few days of each other.

P. tabuensis. This species differs from *splendens* in having a maroon-coloured head and chest in the place of scarlet. In Fiji its range is limited to the island of Vanua Levu, there its numbers have also been seriously diminished by the Mongoose. They are said to be numerous on the island of Eva in the Tonga group, whither they are supposed to have been introduced from Fiji. I was given a fine specimen in full plumage by the Governor, Sir Ev. im. Thurn, K.C.M.G., and this is now in the Zoological Gardens.

P. taviuensis. Quite a distinct species, having a much thicker bill, larger head and shorter tail than the aforementioned birds. The chest is maroon-coloured and the blue nuchal collar is lacking. They are still abundant in the unsettled parts of Taveuni to which it is peculiar, and where the Mongoose has

fortunately not been introduced. They are noisy birds in a wild state. Two young birds were procured in Taveuni. One died soon after arrival in this country and the other is now in the Zoological Gardens.

P. personatus is a local species; its range being confined to the island of Viti Levu. It used to be the commonest of all the parrots in that island, but it is now on the verge of extinction, for which the Mongoose is again responsible. In fact it is said that all the individuals extant are old birds and that no young have been reared for a considerable time. In the neighbourhood of Suva a few are still seen in the Mangrove swamps, and several were seen round the house after the great hurricane of March 23rd, 1910; the heads of specimens shot were covered with lice. I kept one bird in captivity, this had been captured as a nestling several years before. It lived for over a year, but died suddenly a few weeks before I left Fiji. A curious point about these birds is their remarkable goat-like smell, which is especially pungent when kept in captivity and renders their propinquity unpleasant. This emanates apparently from some secretion and is quite independent of the cleanliness of their surroundings. My specimen was in fine green and yellow plumage which, in addition to his docility, made him a very winsome pet.

All these parrots can be easily fed on green maize, vegetables of various sorts and fruit; they do not take kindly to hard food.

I made several attempts to keep the brilliantly-coloured doves, so characteristic of Fiji, in captivity; a recently-fledged *Chrysoena luteovirens* was captured in one of the hospital wards, and by forcible feeding with berries I managed to keep it alive for a week.

On another occasion I winged a fine female *Ptilinopus perousei*, which only lived a few days refusing all food whether native berries, bananas or other fruit.

Of other Pacific birds I procured a lory (*Lorius flavicercus*) and a male Westernmann's Eclectus from the Solomon Islands and a Pacific Imperial Fruit Pigeon (*Carpophaga pacifica*) from Samoa, all of which are doing well.

A RED TANAGER (*Pyrranga rubra*).

By KATHARINE CURREY.

I kept a Red Tanager for several years, and should have had him longer, as he was in perfect health, had he not played the truant, opening his cage-door and flying away to a neighbouring garden, where he was drowned in a watering-pot.

His successor, "Tanny II." was very tame and most intelligent. He sang a few bars of a sweet song and, like his predecessor, made himself quite happy and very much at home in a good-sized double cage that stood in a south window which was always open, so that he was in the air all day long. He bathed perpetually and, curiously enough, was very shy of alighting on the ground. If I put any tit-bit into his cage he would crane his neck and try to reach it from a perch and, failing this, he would pounce on it, hurriedly returning to his perch.

"Tanny" was very quick and clever and always greeted me, if I had been away, flying about his cage, calling loudly, with many manifestations of joy. He was very jealous if I attended to the other cages in the morning before his and scolded me well. If he needed clean water he took his drinking glass in his beak and shook it. Others of my birds have done the same. Of course he soon learned where the mealworms were kept, and if anyone went anywhere near the little cask they were in he peeped round the corner of his cage and screamed, spreading out his glossy black tail and flirting it from side to side. I tried to make him spend the summer in an aviary, but nothing would induce him to leave his cage; if he came out into the room for a flight he hastened back to it. One corner was covered in over a perch and there he roosted. His rich crimson colour, especially bright on his head and neck, never lost its brilliancy. Well does he deserve his name—the 'Red Bird of America.'

I fed him on egg-food, fruit and ants' eggs, with as many insects and grubs as I could get. Mealworms he slowly chewed into little bits in his beak—a most unpleasant proceeding. Flies and earwigs were a great delicacy.

He died of old age, gradually losing consciousness till he ceased to breathe. "Tanny" had a sweet disposition and loved his home and human friends. Such bird-friends leave a gap when they go and a bright memory behind them.

NOTES ON THE MIGRATION OF
THE SPROSSER AND COMMON NIGHTINGALES.

By A. L. BUTLER, F.Z.S., M.B.O.U.

In his excellent paper on the Sprosser (*Daulias philomela*) in the *Avicultural Magazine* for September, Mr. Teschemaker gives some very interesting notes on the recorded migrations of this bird and the Common Nightingale (*Daulias lusciniæ*).

I have collected and observed birds in the Sudan for eleven years (1901—1911), and my experience of these two species has been as follows.

Sprossers annually arrive in Khartoum in large numbers at the beginning of September, and throughout that month and the first half of October they are to be seen under bushes and among the lime trees in nearly every garden in the town. They are exceedingly tame, keeping principally to the ground, and hopping away under cover rather than flying when approached. They have a harsh, 'churring' alarm note. Many of them arrive in a weak and exhausted condition and, judging from the number of their feathers seen lying about, frequently fall victims to cats. On three or four occasions I have known them enter houses. About the middle of October their numbers decrease, and I have no note of them later than October 28th, on which date I shot a specimen in 1908. Their disappearance is then complete until the next September, and they seem to winter south of the Sudan altogether. At any rate, I have never come across them after this, though I have collected on many trips, as far south as Mongalla on the White Nile, south to Fazogli on the Blue Nile, in the Bahr-el-Ghazal Province, in Kordofan, and on the Red Sea coast. I have never seen a single Sprosser in the spring, either in the Nile Valley or on the Red Sea coast—our two great migration routes—and my belief is that this species returns north on a totally different line, perhaps west of the Sahara.

Daulias lusciniæ, the Common Nightingale, hardly seems to pass along this part of the Nile Valley at all. In eleven years I have only obtained one example, a female, shot on the Bahr-el-Ghazal River on January 12th, 1907. On the Red Sea Coast near Suakin, where I have collected in the spring when Black-caps, Barred and Garden Warblers, Thrushes, Chats, Redstarts,

Bluethroats, etc. were all passing northwards, I have never seen a Nightingale at all.

As to the passage of these two species through Egypt I may quote that very close and reliable observer Mr. M. J. Nicoll. "*Daulias philomela*. I have only twice met with the Sprosser Nightingale in Egypt. On May 5th, 1907, I watched an example perched on a wire fence in the Zoological Gardens, and on November 1st, 1908, I obtained a specimen at Giza. The latter example had both feet considerably swollen, and this probably had retarded its passage southwards."

"*Daulias lusciniæ*. Nightingales begin to arrive in Giza towards the end of March, and for a fortnight they abound. Great numbers frequent the Zoological Gardens, and I have seen as many as fifteen together close to the verandah of my house. In the autumn I have only met with this species on three occasions. I think it is probable that the birds follow a different route on their way south from that taken on the passage northwards in spring."

To sum up these records :

- I. EGYPT. Common Nightingales (*D. lusciniæ*) arrive in large numbers in the spring, passing north, but wherever they come from they do not seem to come down the Nile Valley past Khartoum. The Sprosser (*D. philomela*) is a comparatively rare bird in Egypt. There is no appreciable southward migration of either Nightingale through Egypt in the autumn.
- II. SUDAN. Sprossers (*D. philomela*) arrive at Khartoum in large numbers in the autumn, rest for a while, and then disappear, but these birds are not noticed in any quantities passing through Egypt on the way. Their return migration in the spring does not seem to pass through the Sudan at all, and must, I think, follow a route west of the Sahara. *Daulias lusciniæ* is only a rare straggler in the Sudan part of the Nile Valley, and the large numbers which pass through Egypt in spring do not appear here previously. Possibly they work up the west coast and spread across Africa north of the Sahara before crossing the Mediterranean. But the facts may be more useful than conjectures!

CEREBRAL INVESTIGATION.

By EVELYN TRENOW.

Birds and animals will generally use their weapons of offence or defence at the time of capture, either from a sense of fright or in their endeavours to make escape from their captors, but, until they are more or less used to their altered surroundings, it is unusual for them to turn their attention to even their natural enemies or prey. Thus, the newly-caught Owl will ignore the mouse running around its cage in its search for liberty, and the stoat and rat will glare ferociously at one another for some time before the inevitable battle begins.

If, however, one may judge from the following, it would appear that the Great Tit, although difficult to keep alive in captivity, is the most self-possessed of live things, at all events of the feathered sort, at the moment of its acquaintance with its prison.

A desire to add some smaller British birds to an aviary some years since induced me to set traps of various sorts on the snow-covered ground. The birds were feeding voraciously on anything they could find and were easily caught. One fall of the sieve—and the old sieve trap wants a lot of beating—added a Chaffinch, a Greenfinch, two Sparrows and a Great Tit to a good morning's bag. These were all turned into a large cage to be sorted out as soon as catching had finished for the day, when those unlikely to live in captivity were to be released.

Some earlier occupants of the cage, which had arrived but half-an-hour or so before, included a few Blue Tits. These had been dashing about wildly trying to escape, but at the time the Great Tit and his fellow prisoners of the sieve were introduced, were resting exhausted on the lower perches.

The Great Tit, however, had no two minds concerning his mission in life, whether in a cage or outside, for he straightway made for the top perch, balanced himself there for a few seconds, then descended with a swoop on to one of the Blue Tits, burying his beak in its skull. The Blue Tit of course was no more, and the fear of another similar performance obtained for the Great Tit his immediate freedom with the opportunity of continuing in a wider sphere his craze for cerebral investigation.

THE L. C. B. A. SHOW.

I. FOREIGN BIRDS.

By FRANK FINN.

The show of Foreign Birds at the London Cage Bird Association's Exhibition — November 24th - 27th — was far the finest of any I have seen at the Horticultural Hall, both as regards the number and the quality of the exhibits; the judge was Mr. H. D. Astley.

Parrots were not numerous, but good; in the class for Budgerigars, Love-birds and Hanging Parrakeets, all exhibits were in perfect form. Mr. Townsend's exquisite Blue-crowned Hanging Parrakeet (*Loriculus galgulas*) took first; Black-cheeked Love-birds second and third, and a good pair of Yellow Budgerigars fourth; equally fine greens had to be content with v.h.c. There were other birds in the class, and it seems to me very hard on Budgerigars to make them compete with such birds as *Loriculi*, which ought to go in the Lory class, being soft-food eaters, although not true Lories.

In the class for other Parrakeets, Mr. Ezra's beautiful lutino Ring-neck only got "very highly commended," much to some people's surprise, it being so rare an exhibit; if its abnormal yellow colour was the objection, this should have had no weight, as white Javas, blue and yellow Budgerigars are allowed to pass muster. There should really be a class for abnormally coloured prize birds, or these might go in the same class as Foreign Hybrids, which are never numerous. To return to the Parrakeets: first went to a Brown's (*Platyercus browni*), second to Mr. Maxwell's Elegant, and third to a very nice Blue-crowned Conure, shown by Mr. S. Williams. M. Pauwel's Uvean Parrakeet only got fourth; yet, though not so lively as some of the others, it was in good form. There were only two entries in the Lory Class, a nice Ceram Lory (*L. garrulus*) shown by Mr. Mackenzie, and a pair of Dark-throated Lorikeets, not in show form, as their tails were rough.

In the class for other Parrots a hen Everett's (*Tonygnathus everetti*) took first, a Meyer's second, though there was a fine Hawk-head in the class which only got fourth, to say nothing

of the rare Amazon (*Chrysotis ochroptera*); both these last were shown by Mrs. K. L. Miller. *C. ochroptera* is very like the Blue-fronted of which a specimen was also shown; but it has the blue front very pale and the beak whitish, not black. The Blue-front took third; its rare relative only v.h.c.! These were all the entries.

The class for common small finches was extremely well filled and every exhibit was in good form—no less than twenty-two cages of pretty birds. Green Avadavats were first, a cock Cordon Bleu second, a pair of Gold-breasted Waxbills third, and a pair of Orange-cheeks fourth. The others need no comment here, being all of well-known species.

In the class for the rarer Waxbills, Mannikins, &c., there were a dozen entries; a pair of Melba Finches taking first, second also went to a Melba Finch, and third to a Crimson Finch; fourth fell to the share of a pair of Violet-eared Waxbills. In this class also the birds were nearly all in fine form. An Aurora Finch was v.h.c., and the same honour fell to a third pair of Melbas. All species of Grasshoppers, Weavers and Whydahs, not included in the above, made a fine collection of seventeen beautiful exhibits. The most remarkable was the beautiful Jackson's Whydah (*Drepanoplectes jacksoni*) a black species of rather large size with a curved tail strikingly-like that of the common cock; in fact, cock-tailed Whydah would be the best name for it, for in its display, which can be seen at the Zoo, the tail is raised and expanded till it nearly meets the back-bent head, and the resemblance to a bantam cock is most striking. The tail of the Whydah, however, diverges above instead of below when fully expanded. This beautiful bird, new to the show-bench, only got third; it was shown by Mr. Maxwell. First and second went to Fire-tailed Finches, shown by Mr. Temple and Mr. Ross; they were good, but it seems to me a mistake in these mixed foreign bird classes, to give more than one prize to the same species if this can fairly be avoided. A Tri-coloured Parrot-finch (*Erythrura trichroa*) of Mr. Maxwell's took fourth, but it was not in such good form as Mr. Howe's common Parrot Finch (*E. psittacea*) which only had v.h.c. Gouldian and Long-tailed Grass Finches and Diamond Sparrows also figured in this class.

Grosbeaks, True Finches and Buntings numbered ten—a good lot. First went to the Mexican Siskin, a pretty strangely-marked species, black above and yellow below; second to Mrs. Miller's well-known lovely Rainbow Bunting; third to Mr. Maxwell's Black-cheeked Cardinal (*Parusaria nigrigenis*); this, I may say for the benefit of those who have not seen it at the Zoo, is very like the Yellow-bellied, but has black sides to the head and a crest expanding transversely. A beautiful Green Cardinal took fourth; but Mr. Pauwel's Black-and-yellow Grosbeak might well have gone above it, as much rarer. A pair of Pintailed Nonpareil was also shown in this class and a good pair of the true or American Nonpareil, the hen a perfect gem. A Lavender Finch was h.c. but should have been wrong-classed, its place being with the rarer Waxbills, of course.

There was a splendid series of Tanagers in two classes. One for the common sorts—Superb, Tri-colour, Violet, Scarlet, Blue, Palm and Black—and one for all the rest. All were in good form. In the first class, a Blue of the Tobago race took first, and second and third both went to Superbs. In the class for rarer Tanagers, which was much better filled, Mr. Townsend's Gold and Green (*Calliste flava*) was first, Mr. Maxwell's Pretre *Spindalis pretrii* second, while Lady Pilkington took third and v.h.c. with a pair of All Greens (*Chlorophonia viridis*) and a Blue and Black (*Tanagrella cyanomelaena*); Mrs. Miller's Emerald-spotted was fourth, and the Festive, Necklace and Maroon were also shown.

No less than sixteen entries were in the class for Honey-eaters, and formed a most attractive collection, all well shown. Mr. Ezra's Amethyst-rumped Sunbird (*Arachechthra zeylonica*) was the best of this species I ever saw in England, and well deserved its place; there were two good Purples (*A. asiatica*) which species is far easier to keep, as I found out when I brought the first imported Sunbirds to England in 1897; I only had one Purple, which arrived safely at the Zoo, but my last of several Amethysts died *en route* from Plymouth to London; they are very susceptible to cold. Mrs. Bomke's Purple or Yellow-legged Sugar-bird was second; this species, by the way, appears not to go into undress, in spite of sometimes putting out green feathers

—one cock that lived over a year at the Zoo recently never showed any green. One of the Purple Sunbirds, out of colour, but very strong and lively, was third; it seemed to be showing off, raising and expanding its tail. Mr. Townsend's magnificent veteran Yellow-winged Sugar-bird was fourth, and a v.h.c. went to that gentleman's Jerdon's Green Bulbul (*Chloropsis jerdoni*), a lovely hen. This species is very rare in aviculture; even in India I never saw it alive that I remember, but Mr. Harper sent a cock to the Zoo that lived there for years, and somewhere about 1903 I saw another hen at Abraham's establishment. The cock is like a Gold-fronted (*C. aurifrons*) without the gold front; the hen is all green but for a turquoise throat-patch. There were also two fine cock Hardwicke's Green Bulbul (*C. hardwickii*) in this class, besides a Banana Quilt, a Rufous-throated Sugar-bird—formerly called a Tanager (*Glossoptila ruficollis*) and two cock *Dacnis*, one the common *cayana*, and the other I think *D. nigripes*, as it had the dark (instead of flesh-coloured) feet characteristic of that species, but it was smaller than *cayana* instead of larger as the British Museum catalogue measurements make it. It was shown by Mr. Townsend, and might well have got more than h.c. if recognised as a distinct species, which I admit was difficult at first sight. An Indian White-eye (*Zosterops palpebrosa*) bred this year by Mr. W. T. Page, and shown by Miss L. Clare, was an interesting exhibit, and took "commended."

The next class was a fine mixed collection, being for Shammas, Starlings, Troupials, Jays, and other hardy soft-bills. Mr. Pauwel's Long-crested Mexican Jays were first, and deserved; they seem to be *Cyanocitta diademata*. They were smaller than the English Jay, with dark, long-crested head, white eye-marks, and blue body—plumage barred with black on wings and tail. A Shama was second, and a Larger Hill Mynah third, a Glossy Starling fourth.

The class for "all other species not comprised in the above" was well filled, and, as might be expected, particularly interesting and numbered nearly two dozen. A splendid Raggi's Paradise-bird (*Paradisaea raggiana*) shown by M. Pawvels, naturally took first; Mrs. Miller's Japanese Redbreast (*Erithacus alsahige*) was second, but I preferred Mr. Ezra's specimen of the





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TICHODROMA MURARIA.
IRENE TURCOSA. HALCYON SMYRNENSIS.
DINEMELLIA DINEMELLI.

same bird, which only took v.h.c. This bird is very like our Robin, but has a short reddish tail and sooty abdomen; Mrs. Miller's bird was coloured in other respects just like our Red-breast, and had a similar plump shape; the other specimen was darker and much slimmer, more like a Nightingale in build—I really don't know which type is correct, however, in such a rare bird! There were two Temminck's or Loo-choo Robins (*E. homadori*) in the class, of which Mrs. Miller's took v.h.c. M. Pauwel's Malayan Fairy Blue-bird (*Irena turcosa*) was third, a most magnificent creature in its enamelled blue and velvet black plumage; but as the said plumage was rough on the underparts, I should have preferred Mr. Maxwell's quaint little Coppersmith Barbet (*Xantholœma haematocephala*), the first ever shown, though the commonest of Barbets in the wild state, being heard even in street trees in Calcutta. Not bigger than a Greenfinch, its green plumage is diversified on the head and throat by scarlet and yellow. It is easy enough to keep and feed on fruit and bread-and-milk, but will not stand *satoo*. Besides these rarities, this wonderful class contained a Blue-throated Flycatcher, a Cuban Trogon, an Indian White-breasted Kingfisher (*Halcyon smyrnensis*) a Hauxwell's Hangnest, a pair of Verditer Flycatchers (*Stoparola melanops*), an Indian Yellow-cheeked Tit (*Machlolophus xanthogenys*) and a White-crested Jay-thrush. The Kingfisher was particularly interesting, as belonging to a group rarely shown, but was not in show plumage, the tail being rather rough; but it is a young bird, and will doubtless improve in steadiness. This species feeds as much or more on land animals as fish; in plumage it is blue and chocolate with white breast. The belt and feet are coral-red in the adult, dusky in the young.

The Foreign Hybrid class contained only two kinds, two ugly little crosses between the Zebra Waxbill and Silver-bill, brown with black short tails, dull yellow bills, and a Tit intermediate between Pleske's Tit (*Parus pleskei*) and the lovely Azure Tit (*P. cyanus*) presumably a wild-bred hybrid. Pleske's Tit is much like a Blue-tit, but paler, the Azure is white with blue wings and tail, the latter being longer than in other members of the genus *Parus*. Both are Continental.

The "Pairs for Foreign Hybrid breeding" class had five

entries, but calls for no comment. I cannot see the use of such a class, especially when, as hinted above, the abnormally-coloured foreign birds badly need accommodation in a separate section. Nor is it necessary to say anything here about the Selling class, the exhibits being not rare, although in good condition.

The two classes for members of the L.C.B.A. only, however, contained some good birds. In the Seed-eater class M. Pauwels won first well with a lovely Dinemelli's or White-headed Weaver (*Dinemellia dinemelli*) a bird as big as a Song-Thrush, white with black wings and tail and a rump vent which should have been scarlet, but was orange. Among the soft-food eaters the same gentleman showed one of the gems of the show, a pair of fruit-pigeons of the genus *Ptilopus*, green with rich yellow abdomen; a unique and beautiful exhibit well worthy of the first prize they obtained, and a fit one with which to conclude what I fear is a very imperfect notice of a veritable festival of aviculture.

II. HYBRIDS AND BRITISH BIRDS.

By J. L. BONHOTE.

The British Birds were as usual well represented at this Show, and the glorious trim and condition of many of our common birds must have convinced the most sceptic that our country can, in its avifauna, show as beautiful an assortment as many others more favoured from the climatic point of view.

We have not time or space to go into detail over the well-filled classes of Bullfinches, Chaffinches, Linnets, Redpolls and others, but must confine our notes chiefly to the rarer kinds. We were sorry to notice that three Classes (Song Thrush, Wagtail, A.O.V. Thrushes and Woodpeckers) had to be cancelled from lack of entries. All these species make most satisfactory cage-birds and, especially the Thrushes, are widely kept, and it is disappointing to see that where such a good and liberal classification is offered fanciers do not support it.

The gem of the collection was undoubtedly Mr. Pauwels fine pair of Wallcreepers, a species we do not remember to have previously seen in confinement, and from their condition and feather they certainly did credit to the owner and Mr. Milsum.

Another rarity was a very nice Grasshopper Warbler in good condition, though, we understand, that it had found the journey rather trying; the same Class contained Dartford Warblers, a Wry-neck and a splendid adult Black Redstart in beautiful plumage. Among the Larks and Pipits were several Shore Larks and two Rock Pipits, the last named being quite a rarity in a cage, although common enough round our shores. Class 160: European Birds, contained beside the Wallcreepers, a Two-barred Crossbill, which we fancy we saw last year, an Icterine Warbler, a Red-breasted Flycatcher and a Snow Finch, as well as one or two commoner species. Class 157 contained a Sedge Warbler, a Willow Warbler, and a Greater and Lesser Whitethroat. On walking through a Show such as this one cannot help wishing that some of those who so persistently decry bird-keeping could be present, most of their arguments would at once fall to the ground, for the excellent health and condition of these delicate birds, and their reappearance at the same Shows in successive years is sufficient proof that kindness, care and attention, and not starvation and cruelty has been bestowed upon them. Unfortunately these people never come to look for themselves! The Pied and Albino Class contained a fine Silver Starling, which has been, if we remember right, seen on the show bench for several years past. There was a white Robin and a white Hedge Sparrow, both showing a tinge of yellow on the breast, and a Bullfinch with a white cap suffused with a delicate pinkish tinge. Hybrids were a strong lot; the Bullfinch hybrids included Redpoll, Linnet, Greenfinch, Goldfinch; there were also Greenfinch-Redpoll, Redpoll-Goldfinch, Siskin-Greenfinch, Bramble-Chaffinch, Twite-Greenfinch, Goldfinch-Siskin, Siskin-Redpoll and Greenfinch-Chaffinch.

This last is probably the greatest rarity, and is the first and only one that has so far been bred. In general bulk and shape it takes after the Greenfinch, the colour of the back is brown and we could not detect any trace of the bluish head of the Chaffinch. The breast was pale vinous, clearly showing the Chaffinch origin, fading off to yellow on the vent, The wings showed the white bases to the primaries characteristic of the Chaffinch. We see no reason to doubt the parentage of this bird, the only other possibility is a Bramble-Chaffinch, but the build is so much that

of a Greenfinch that this species must, in our opinion, have been one of the parents. The bird was bred by Miss Reeves, to whom the fancy is already indebted for many rare hybrids. In this case ten Chaffinches were put in an aviary with cocks of the following species: Hawfinch, Greenfinch, Goldfinch and Canary, so that it is obvious that the bird could have had no other origin than from a Greenfinch and Chaffinch. We much regret that among the many good things we omitted to make any notes on Mr. Vales Twite-Greenfinch, a cross, which though not unique, is but seldom seen.

NOTES ON SOME JAMAICAN BIRDS.

By H. E. ATTEWELL.

The Savannah Blackbird or Tickbird (*Crotophaga ani*) is not one of the few species to which Jamaica claims exclusive rights: it is found in many tropical parts and its main characteristics are pretty well known. Gosse portrays it very accurately, and being so much in evidence there are multitudes who can confirm his writing on the bird.*

Some *C. ani* have recently been engaged in nesting near my house, and we have to some extent been able to follow the birds' habits.

May I be allowed to draw, say, two-thirds of a circle with approximately fifty yards for the radius and the house as a centre. There will be included an ebony tree, a tamarind, a genip, another tamarind, next a guango and then a yokewood tree. A few others of smaller size and importance punctuate those named. At the time I write, the first mentioned, the ebony, contains a Blue Quits (*Euphonia jamaica*) nest, the next has still the nest of a Banana Quit (*Certhiola flaveola*) hanging from a twig, the young birds having quit two weeks previously. The genip tree and its next neighbour have both been favoured by *C. ani*, while high on the guango, which grows almost into the last, the "Loggerhead" (*Tyrannus caudifasciatus*) has very recently reared a young bird, and the last-named tree of my list—the yokewood—a week ago had at its top the hammock-like nest of the

* See Series II., Vol. I., p. 22.

Banana Bird (*Icterus leucopteryx*), whose two young resolutely refused to be hand-reared. If you will follow me less than one hundred yards from this imaginary arc-end I will show you one more nest—also in an ebony tree—it is that of the Ground Dove (*Chamæpelia passerina*), a poor platform nest the size of a small man's palm, in which the fully-fledged young can be seen side by side, making as charming a picture as one could wish. No doubt if we looked around a little, more than one Mocking Bird's nest could easily be found, and just over there in that bank it is safe to say at least one 'Tody's eggs or young could be found. We are satisfied further that a pair of Long-tailed Humming Birds (*Aithurus polytmus*) have nested in the Banana Quit's tamarind tree, and, judging from the scores of Vervain Humming Birds (*Mellisuga minima*) that resort to its blossoms, there must be several nests of such birds not far away, the size of which may be incidentally mentioned as being, *when the young has flown*, no bigger on the top than a two-shilling piece! I have proved this, nor did the coin slip from the top into the nest. While digressing let me just add one other nest that is to be found in the particular trees named. It is that of the common brown rat driven to an arboreal life by the mongoose. I more than suspect this animal has interfered with my Blackbirds in one instance and 'improved' on the birds architecture to its own purpose.

Nor is the Savannah Blackbird's nest much to brag about. Let it be remembered the bird is nearly related to the Cuckoos, and all honour to the Cuckoo that makes a nest. We may congratulate the creature on its higher sense of duty; it may, however, be an open question as to whether the bird is on the upgrade or the reverse.

Popular belief allows quite a number of these birds to designedly assist each other in nidification. My own examples do not completely confirm the argument, for in neither of two instances was an unusually large structure made nor more than eight eggs laid. I have examined several old nests, and in every case have found one or more old eggs buried in the materials, such being ebony and lignum vitæ twig ends with upholstery of maseberry leaves.

Did not a company of *C. ani* remain interested in what was

going on, it might be suspected that they were but one remove better than the familiar Cuckoo proper, whose propensity for shirking maternal cares is so well known and, but for this interest, one might infer that, having found another of the family so minded as to build for herself and to incubate, the opportunity is seized to add to the proposed complement of eggs. There is, I think, some evidence of hesitation for, on one occasion, I discovered an undoubted Savannah Blackbird's egg in an undoubted Mocking Bird's partially-built nest scarcely beyond one's natural reach.

It is well the bird's egg is so coated with calcareous matter, for the scratches and raspings tell the rough treatment it receives from this most clumsy-footed creature. Indeed, so strongly is the egg put together that I have had several dropped, say thirty feet, on to a lawn without fracture! It is the ungainly bird's clumsiness that makes him so conspicuous an object; he cannot perch with a balance until a see-saw exercise has been gone through. Were not the arched culmen of the upper mandible as good as wanting in the naked coffee-coloured and open-eyed chick, one might conclude the exaggeration was of use as a lever in helping them from the hard egg-shell.

At the risk of life, limb (and law) it was possible to keep a brood of these birds under observation; they were raised and lowered pulleywise in a cage, and our hopes they would not be neglected were realized. Seeds, berries and insects are the Tick-birds chief diet, which also includes a lizard. There is also no reason why a fully-grown mouse should not be relished, but it surely shows a lack of discernment to present such to young birds; this animal, a lizard and a very large grasshopper were all found tramped underfoot by the caged brood. The morsels were far too large. Elsewhere than in Jamaica 'home remedies' are fearful and wonderful, but I think mouse-tea for whooping-cough beats all. I was presently asked by one, who proved to have been a spectator, for the mouse! Asking its use, I was assured it was when made into tea a certain cure for the complaint named.

Whilst on the bird's bill of fare, it seems to me more than likely very many small snakes, reputedly scarce in Jamaica, find their way to *C. ani's* digestive organs. It is wonderful how

length without breadth lends itself to a bird's claw. With the digression I close. Quite recently, screams from a kitchen filled the household with alarm—the terror-stricken cook could only point to a partly-dressed fowl. Quiet having been obtained the cause proved to be a freshly-swallowed snake, $17\frac{1}{2}$ inches long, partly within the unfortunate chicken's gizzard!

To return to the Blackbirds, and in self extenuation let me just add they were duly liberated and will I hope live to a good old age.

BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

The most important additions during the past month consist of three very rare Lories deposited by Dr. Philip H. Bahr, namely, a Green-tailed Lory (*Lorius chlorocercus*) from the Solomon Islands, and a pair of extremely beautiful Ruffed Lorikeets (*Calliptilus solitarius*) from Fiji. The first of these is not new to the Society, a pair having been purchased as long ago as 1867, from which Wolf made a coloured drawing which was published in the *Proceedings* for that year. The prevailing colour of the bird is red, the wings and apical half of the tail green. The top of the head and a patch on each side of the neck black, while the breast is crossed by a band of yellow.

More beautiful still, and quite new to the Society's collection, is the Ruffed Lory or Lorikeet, which Latham called the Solitary Lory—a name which is most inappropriate, as the species is gregarious and anything but solitary. In Fiji it is known as the "Kula," and is said to be trapped in numbers by the natives for the sake of its bright feathers which are used for the personal adornment of the Tongans and Samoans. The Fijians keep them in captivity, and the native girls are said to feed them on sugar-cane which they (the girls) chew, and allow the birds to take from their lips.

The Ruffed Lory is about the size of the Ornate Lorikeet, but has a short rounded tail. It is green on the upper parts, bright red below with a very dark blue cap and a band of the same colour on the abdomen and thighs. Its chief beauty, how-

ever, lies in the collar or ruff of long pointed green and crimson feathers on the nape which give it a quite unique appearance.

Besides the foregoing, Dr. Bahr has very kindly presented the Society with four of the beautiful Parrot Finch from Fiji, *Erythrura pealei*, which, I understand, is shortly to be figured in this journal.

A pair of the curious Coscoroba Swans (*Coscoroba candida*) from southern South America have been received by exchange, and make an interesting addition to our collection of waterfowl, as the species has not been represented in the Gardens of late years.

I have often thought that it would be interesting to encourage the nesting of wild Tits in the Zoological Gardens by providing them with suitable nesting sites, and we have now been enabled to do this by the generosity of Mr. J. M. D. Mackenzie, who has obtained from Germany more than a dozen of the excellent nesting-logs designed by Herr von Berlepsch, and placed them at our disposal for use in the Gardens. Fortunately there are plenty of suitable trees, and the logs have been fixed in various parts of the Gardens, and we hope they will be occupied in the Spring.

CORRESPONDENCE, NOTES, ETC.

WINTERING BIRDS IN AN OUTDOOR AVIARY.

SIR,—In the April number of the *Avicultural Magazine* you asked for information about birds that had successfully wintered out in member's aviaries.

The following have lived through one or more winters here :—Silky Cowbird, Java Sparrow, Rose Pastor, Malabar Mynah, Pope Cardinal, Common Cardinal, Saffron Finch, Cut-throat Finch, Diamond Dove, Senegal Dove, Zebra Dove, Californian Quail, Rain Quail, Common Quail, Madagascar Lovebird, Passerine (blue-wing) Parrakeet, Blood-rumped Parrakeet, Budgerigar (green *not* yellow), Cockatiel, Pileated Song Sparrow, Reed Bunting, Cirl Bunting, Common Canary, Greater Spotted Woodpecker, Orange Bishop, Masked Weaver, Russ' Weaver, "Pekin Robin" and Crossbill.

A Ring-neck Parrakeet has been at large in the garden for eighteen months.

My aviaries are built in rather a rustic manner facing south-west, backing out on an estuary of the Solent, (the Beaulieu River).

The land slopes down to the water so that the aviaries get very wet in the winter.

The largest aviary is twenty-seven feet square, with two sheds at the back, and the birds can always go in or out of these at their pleasure.

The sheds are rather draughty, and in prolonged wet weather the rain comes through the roof. The birds do not seem to mind though and always look in the pink of condition. I do not think I have had a single case of a bird dying from cold pure and simple.

Before I had the aviary properly boarded up at the ends, I lost some birds after several days of continual south-west gale with driving rain.

My only fad is to under feed my birds. That is to say, they are fed every morning and by the next day every seed is eaten and they have evidently got healthy appetites for their breakfast.

Their menu consists of Canary seed (the best) French millet and spray millet and a few Sunflower seeds. In cold weather they have in addition, a little hemp.

I cannot help thinking that many birds in captivity are over-fed. Since feeding mine less they have looked much better and are much more active.

All the birds can pick over the soft-food which consists of "Cecto," bread and cake crumbs, currants, sultanas, suet (in cold weather), any fruit that is in season and green stuff. Mealworms in winter only, as the birds catch so many insects amongst the bushes and tall grass.

PHILIP GOSSE.

FOOD OF THE LITTLE GREBE.

SIR,—I should be much obliged if you could put me in touch with some member of the *Avicultural Society* who has had practical experience in keeping Dabchicks (Little Grebe).

All the birds I get die within a few days and I evidently do not understand how to get them started in captivity.

I have sent several to the Zoo, but the results there also were disappointing.

I shall probably have an opportunity of getting several more birds shortly and should like to know how to treat them. C. BARNBY SMITH.

REVIEWS.

L'AGE DES PERDRIX.*

As year by year the number of new species to be discovered becomes less and less, so, by slow degrees, ornithologists are beginning to find out that the mere describing and naming of some hitherto unknown species adds but little to our real knowledge of birds.

If any further proof were needed to drive home what is really a self-evident proposition this work of Dr. Bureau, the eminent French ornithologist, should be of itself sufficient to dispel any doubts on the matter. Dr. Bureau has taken one of our commonest species, and one, moreover, which is perhaps the most frequently shot of any of our native birds, not to mention hand-rearing, importation and other factors which bring this bird to the notice of sportsmen, game-keepers, ornithologists, caterers, cooks and others, and yet how many of these people, to whom such matters are, or should be, of considerable importance, can tell an old from a young bird in December?

This work is devoted entirely to questions of plumage and moult. Dr. Bureau has made exhaustive notes by watching and marking coveys in their wild state and has further called in aviculture by checking his results and getting more precise data from captive birds. The result is a very careful and complete account of their plumages and methods of moult, especially during the first six months of their lives.

Of the main facts brought forward there can be no doubt. The author shows that a partridge in its first year may always be told by the first two primaries being pointed and not rounded as in the case of the old birds. This is due to the fact that these first two primaries are *not* moulted in autumn with the others and thus form remnants of the juvenile plumage. Until October or November, Dr. Bureau holds that the age of any young bird can be told almost to a day by the length and development of the growing primaries. We are inclined to think that sufficient allowance has not been made for individual variation in this

* *L'Age des Perdrix*, by Dr. LOUIS BUREAU. Nantes, Vic Libraire, 28 Passage Pommeraye, 8vo., 124pp. and numerous illustrations. 7fr. 70c.

respect, but, according to the facts given, the case is clearly made out, and must, therefore, be accepted, at all events for that part of the country (West of France) where the observations were made.

The young birds make their first flight when thirteen days old, by which time seven primaries and eight secondaries are fairly well developed, the third primary is still in the quill, and the first two have not yet made their appearance; at the age of twenty-three days the tenth primary is cast, and the second primary, which has not yet grown, makes its appearance; five days later the ninth primary is cast and the first appears, and thus the moult continues till all, except the first two, have been renewed. Apart from the primaries, which, from the point of view of age, are the most important character, other details of the moult and plumages are well and carefully dealt with, and we notice that while accepting the differences in the wing coverts, as first described by Mr. Grant in the *Field*, as the best means for distinguishing the sexes, the author is careful to point out that this distinction by no means holds good for *all* cases. The book is one to which justice cannot be done in a short critique, it bears the mark of most accurate and painstaking work, adds greatly to our knowledge of the species, and is well worthy of a place on the bookshelves of every lover of the 'little brown bird.'

THE COMMON GULL.*

This is a book of photographs showing various phases in the life history of the Common Gull, and although it can hardly be said that the pictures are very descriptive, or tell us anything new about the life history of these interesting birds, the book forms a nice addition to the pictures of bird-life of which we see so many now-a-days. Some of the photographs are not as 'sharp' as we should like and appear to have been touched up; and others, as for instance 'Following the Plough' is a most artistic picture, but the birds are rather small. A short account of the species, translated from the Danish, is given at the end of the book.

* *Life of the Common Gull*, by C. RUBOW. London; WITHERBY & Co. 1/6 net.

MIGRATION OF BIRDS.*

The Sixth Annual Report of the B. O. C. Migration Committee is brought out on similar lines to the previous Reports. We are, however, pleased to notice one very beneficial change, namely, the summarising of the autumn records, where possible, into a connected account, instead of the interminable list of records given in the previous Report. Besides economy of space, this new method will prove much more interesting and intelligible to the general reader. These Reports only deal with the actual records received during the year, and no attempt is made to generalize or draw any deductions for the present, though, as we are told in the introduction, this will be done to some extent when material over a sufficient number of years has been got together. The main facts of interest during the spring of 1910 appear to have been the absence of any great 'rushes,' and the extremely late arrival of certain species, *e.g.* the Spotted Flycatcher.

The scarcity of the Land Rail in the southern and eastern counties is well shown by the occurrence of only one record (Norfolk, May 6th) east of a line extending from Wilts to Yorkshire. Within the last ten years it was a common bird in Cambridgeshire, as well as in many other of the south-eastern counties, and its almost complete disappearance in so short a time is very remarkable. The autumn notes contain records on a large number of species; of the common birds, a fairly full and connected account of their movements is given, while in other cases we have the records of solitary rare wanderers, such as the Barred Warbler, Golden Oriole, Red-breasted Flycatcher, Lesser Kestrel, Honey Buzzard, and many others.

We recommend this Report to all students of our native birds, it will bring home to them the movements and travels of the bird world, which are going on in practically every month of the year, and which may be noted by anyone who cares to observe and note the different species met with in any particular area,

* Report on the immigrations of summer residents in the spring of 1910; also notes on the migratory movements and records received from Lighthouses and Light Vessels during the autumn of 1909, by the Committee appointed by the British Ornithologists' Club. London: WITHERBY & Co. 6/- net. 8vo. 313pp. and maps.

and in addition we would ask them to help in the work by purchasing the Report. These volumes are expensive to print and bring out and the Committee is dependent on voluntary subscriptions and sales to meet these expenses.

THE EMU.*

The numbers of this Journal under review contain, as usual, many interesting articles on the Australian and New Zealand fauna. In the April number Mr. Jackson gives an interesting account of his search for the nest of the Rufous Scrub Bird (*Atrichornis rufescens*), a very rare and skulking species. The article is illustrated by numerous photographs showing the nature of the bush and situation of the nest. Mr. Jackson also met with the Lyre Bird and gives photographs of its nest and dancing ground.

The July number contains, among many other notes, a long and interesting paper by Mr. S. C. McLean on the Bush birds of New Zealand, and by Mr. Barnard on Field notes from Cape York.

In the October number we have a nice coloured plate of the Yellow Shrike Tit (*Falcunculus whitei*). Mr. McLean continues his notes on New Zealand Birds; Mr. Cleland writes a valuable paper on the stomach contents of many species of native birds, and Mr. Buturlin, the well-known Russian Ornithologist, gives an account of the Australian Birds he met with in Siberia, and there are also many articles and notes on other Australian Birds. Our friends in Australia are evidently keen ornithologists, and they are fortunate in possessing a most interesting avifauna, about which we have still much to learn.

Publications received:—A Naturalist on Desert Islands by P. R. Lowe; Home Life of the Osprey by C. A. Abbott; Canaries, Hybrids and British Birds by John Robson and others.

* *The Emu*, Journal of the Royal Australasian Ornithologists' Union. April, July and October, 1911. London: E. A. PORTER.

THE SOCIETY'S MEDAL.

Medals have been awarded to the following gentlemen for breeding species for the first time in this country.

Mr. H. D. ASTLEY for breeding the Rose-breasted Grosbeak (*Hedymeles ludovicianus*) Ser. III., Vol. 2, pp. 333 and 370.

Mr. W. E. TESCHEMAKER for breeding the Hawfinch (*Coccothraustes vulgaris*), Ser. III., Vol. 3, p. 28.

Mr. R. Cosgrave is apparently entitled to a medal for breeding the Laughing Kingfisher (*Dacelo gigas*) an account of which will appear in our next number. Will any Member, who knows of a previous instance of this species having been bred, kindly communicate with the Hon. Sec. ?

PRACTICAL BIRD-KEEPING.

X. QUAILS.

By D. SETH-SMITH, F.Z.S.

The Quails and their allies form a group of little birds that are very attractive inmates of the aviary. They are mostly hardy, and many of them will breed quite readily in captivity providing the aviary in which they are kept possesses certain necessary features. It should be of fairly large size, or rather should cover a good sized area, though it need not be very lofty. If possible it should not be less than from thirty to forty feet square, but if twice or three times this size, so much the better. The greater part should be turfed and planted with clumps of bushes, and the grass allowed to grow to its full height during the summer. The birds should have access to a well-lighted dry shed where they can indulge in a dust bath whenever they feel so inclined.

The species of Quails and Quail-like birds are very numerous, and it is impossible here to mention them all or to go into details as to the special treatment necessary for some of the rarer kinds. Those which are most likely to be kept in captivity are the Common Quail (*Coturnix coturnix*) and its allies the Rain Quail, the Harlequin Quail, and the Australian Quail; the Chinese Quail (*Excalfactoria chinensis*); the Australian Swamp Quail (*Synoecus australis*); the Jungle Bush Quail (*Per-*

dicula asiatica), and some of the American Quails, amongst which is the commonest and most beautiful of all as an aviary bird, the Californian Quail.

All of the foregoing are hardy, and easily kept on a simple diet of seed and green food, and most of them are not particularly quarrelsome. I should not be disposed, however, to keep either Bush Quails or Californian Quails with other species of the smaller ground birds, though I have not found any of the others to be particularly aggressive if kept in a large enough enclosure. The only difficulty in keeping more than one species of the same genus, say of *Coturnix* in the same aviary is that cross-breeding may occur, if say a pair of the Indian Rain Quails and a pair of African Harlequins are kept together.

Quails commence pairing about April, but do not, as a rule, go to nest until the grass is well grown. Then the cock is very busy, uttering his shrill call-note and selecting sites for the nest which he tries to persuade his mate to adopt. The site finally selected is generally under a tuft of coarse grass which is cleverly concealed by the blades being drawn down to form a dome. The number of eggs to a clutch varies with the species, but six or seven is the usual number for the smaller species, while the Californian Quail often lays considerably more. Incubation is performed by the female only, and occupies from sixteen to twenty days according to the species. Young Quails when first hatched are extremely beautiful little things, resembling miniature partridge chicks. They remain in the nest with the mother for about the first twenty-four hours, after which they follow her away into the grass.

This is a critical time for the chicks, for should there be any weakly ones they may be left behind, when they soon perish.

A plan adopted by the writer some years ago for rearing young Quails proved very successful. A run, about six feet long by four feet wide and twelve inches high was made, the sides close boarded, but the top of wire netting, one end was hinged at the top so as to allow of the Quail and her brood being driven in. Part of the top was made to open for feeding. Leafy branches were placed over part of this run, and a sheet of corrugated iron

kept in readiness to be placed over in case of heavy rain. Care was taken that the run was placed on good turf in a dry situation.

Into such a run the hen Quail with her brood is driven as soon after they leave the nest as possible. Ants' nests are searched for and dug up (enough can usually be found in any fair-size garden) and a tin of ants and their eggs kept in readiness to supply the chicks at frequent intervals. After a day or two finely chopped yolk of egg is supplied and readily taken by the chicks, which after a short time will take coarser soft food consisting of chopped egg, breadcrumbs and finely chopped chickweed. Seed, in the form of millet and Canary, must be supplied for the mother, and it is surprising how soon the chicks also will take to eating this.

A dusting bath—consisting of a heap of dry lime rubbish and sharp sand—must not be omitted from the run. About once a week it is desirable to move this run on to fresh ground, and when the young birds are about three weeks old they can be let out with their mother into the aviary again. It is desirable, however, to clip the feathers of one wing to prevent their flying up and damaging their heads against the top of the aviary. In fact most Quails in captivity are best pinioned so that it is impossible for them to fly against the aviary roof. The American Quails however are great perchers and should be left with full wings.

I know of few prettier sights than that presented by a brood of newly-hatched Chinese Quails, little larger than bumblebees, as they follow their mother through the grass, or rush to her call when she captures some tiny insect.

NOTICES TO MEMBERS—(Continued from page ii. of cover).

NEW MEMBERS.

Mr. P. SUTTON, Melbourne Lodge, 28, Carlton Road, Putney, S.W.
Mrs. WILLIAMSON WALLACE, Kelton, Dumfries, N.B.

CANDIDATES FOR ELECTION.

Dr. C. B. TICKHURST, Grove House, Lowestoft.
Mr. E. E. COOPER, Berrydown Court, Overton, Hants.

Proposed by J. L. BONHOTE.

ILLUSTRATION FUND.

The Committee beg to acknowledge, with many thanks, the following donation to the Illustration Fund.

Miss Chawner £0 5 0

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Five Magpie, show condition, 1st and special, Hastings, 1910. Kept in outdoor aviary, 15/-; Cock Golden Pheasants in splendid colour, 20/- each. Miss STURTON JOHNSON, Orotava, Ore.

For Sale—*Avicultural Magazine*, Vols. II., V., VI., 17/6; *Harting's Handbook of British Birds*, published at 40/-, price 17/6. OAKLEY, 34, High Street, Leicester.

Tame Patagonian Conure, £2. sex unknown. Unrelated pairs of green Budgerigars, 5/-. Mrs. WILLIAMS, Emmanuel Parsonage, Exeter.

Outdoor Aviary-bred pairs Zebra Finches, 7/-, two pairs 13/-; Diamond Doves, 17/6; Saffron Finches, 7/-; Green Cardinals, 20/- each, 37/6 pair. HOUSEMOULTED Greenfinches, Chaffinches, 1/6 each; pair white Crested Quail £3 10/-. Many other foreign birds, list on application. RATTIGAN, Lanarkslea, Cornwall Gardens, London, S.W.

Exceptionally fine talking Eupatorian Parrakeet, tame and amusing, non screamer, £5. C. DELL, 12, High Street, Harlesden, N.W.

WANTS.

The charge for members' advertisements under this heading is FOUR PENCE FOR TWELVE WORDS or under, and one penny for every additional three words or less.

Wanted.—Cock Shama, Fruit Suckers, Glossy Starlings, Sprossers; all sorts of Foreign Thrushes. Mrs. WARREN VERNON, Toddington Manor, Bedfordshire.

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AVICULTURAL MAGAZINE.

Edited by J. LEWIS BONHOTE, M.A., F.L.S.



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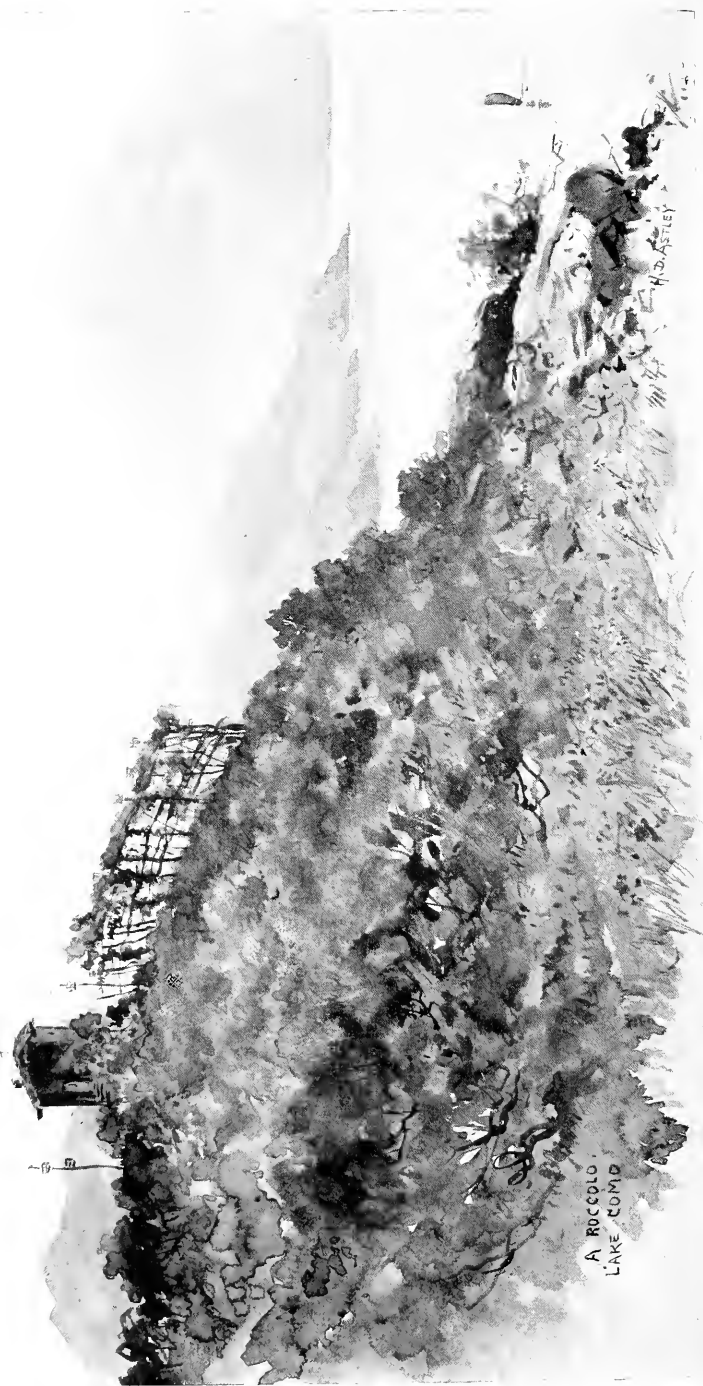
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A ROCCOLO.
LAKE COMO.

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JANUARY, 1912.

A ROCCOLO IN ITALY.

By HUBERT D. ASTLEY, M.A., F.Z.S., M.B.O.U.

The bird's death-trap! The autumnal migration through the valleys, up the gullies, a constant flitting and flutter of wings. They are going south, these thousands and thousands, and what thousands never reach their destination, for the roccoli are there awaiting them, perched on every available wooded projection and promontary. Very picturesque to look at. A flat piece of ground on an eminence is chosen, sometimes not far above a lake, sometimes higher up the mountains. A small building is erected, looking in the distance like the remains of some ruined tower, in front of which is a large circle of young trees, trained into the form of a bower. The building, of stone, with usually a roof of the same material, consists of a ground floor and an upper one. The room on the ground floor faces towards the actual roccolo, and in it is kept a heterogeneous collection of decoy birds, as well as a few of the fresh caught ones for which there may be a sale as living specimens. It is quite small, and quite dirty, this lower place.

In the one I visited, there were as far as freshly caught birds went, some dozen Goldfinches, a fine Fieldfare, a Redwing (it was the 20th of October), one or two Song Thrushes, two or three Coal Tits, a Serin Finch and some Hawfinches. One was sorry for these prisoners, but all pity for them was swamped at finding two blinded birds, blinded by a hot wire I fancy, and blinded for life.

The abomination and the vileness of it! The ignorant brutality! These poor birds are supposed to call all the more

when they hear their wild brothers and sisters and cannot see them. Call? no wonder they call. But why haven't their cries been heard through all these many years by the Church of the country. Is it because to preach against such horrors would be unpopular, is it because it matters not what the people do so long as coffers are full. Bah! and if you complain to the Priests they shrug their shoulders. The dumb animals are not Christians, and they who should and could have (it is getting rather too late now) taught their people the spirit of mercy, are amongst the first to fill their bellies with Robins, Titmice and even Golden-crested Wrens, some of which have been lured to their death by blinded birds.

I think that the man in the roccolo 'sat up' that day when I told him what I thought about it all, and a wooden cross was erected on the top of the turret where he crouched like a large spider awaiting flies. I asked him whether it signified the crucifixion of the birds? I asked him whether he supposed the 'Santissima Vergine' smiled upon him when he went to Mass, leaving his birds with their scorched and lifeless eyes in the Roccolo.

The Roccolo! My indignation has drawn me from the description of the turret. At the back is a flight of stone steps leading first of all into a small lobby where food is kept for the fowlers, and from thence you ascend a short ladder which brings you into the upper chamber overlooking and surmounting the death-bower. There is no window, but a large opening, with boards fixed at either side in which are gaps for peeping through, and a space in the centre. Behind the boards, which are as it were rough shutters, the fowler sits holding what at first sight might be taken for a rosary, but is really small brass bird-calls of various notes and sounds strung on a string, one of these calls he keeps to his lips and from time to time imitates first one bird and then another. Suddenly he rises up. Two or three birds, attracted by the decoys or by the artificial calls, have settled on the bent saplings. At the fowler's feet is a heap of wicker racquets, or what look like short-handled racquets: one of these he siezes and quickly hurls it through the open space between the shutters, through the window one might say,

accompanying the action with a shrill high-sounding blowing whistle through his teeth in imitation of the descent of a large winged bird. The Linnets or Goldfinches, or whatever they may happen to be, hearing the sound and seeing the wicker racquet hurtling towards them, mistake it for a hawk, and immediately dive down amongst the trees only to be immeshed in the spiders' web of fine nets, which not only encircle the whole bower, but also stretch across within the Roccòlo in more than one place. The nets are of fine thread, and are full of pockets from top to toe. Directly a bird flutters against one, it falls into a pocket and has no more chance of escape.

All round the tops of the entwined saplings which form the circle, small cages are fastened in which are the decoys. Chaffinches, Hawfinches, Linnets, Titmice, Thrushes, Bramble Finches, etc. The older and staidier ones call repeatedly, and the Chaffinches break into song. It is the only song to be heard in Italy at the time of the autumn migration. What an irony! For the rest, the fowlers and the cacciatori (hunters)—“sportsmen” I suppose they call themselves—are everywhere with their abominable nets and their guns.

The poor birds are not given much chance of *singing*! One would laugh if one was not so disgusted, to see a well to do Italian “cacciatore” issue forth for a day's shooting, often garbed in impossible knicker bockers and stockings with yellow button boots very long and turned up at the points. A gun and a cartridge-bag and a “cane di caccia”—generally a mongrel pointer. And there he goes stalking a Tom-tit, and banging here, there and everywhere, not infrequently just by the high road itself, and also not infrequently sending a shower of small shot rattling about your head as you sit in your garden. I have seen some of these gentry shooting at House Martins. If their grandmothers were good to eat they'd shoot them.

But I have strayed again from that hateful Roccòlo, (bye-the-bye! the first “o” is long, the last two short in pronouncing the word, and in Italian the “o” is as round as that of Giotto's).

Besides the decoys in cages, some Chaffinches or Greenfinches are tied round their bodies by string, which latter ascends from the ground within the circle to the hand of the fowler up in

the turret, and from time to time he gives it a pull, so that the imprisoned decoys at the other end are jerked into the air and fluttered up and down, and attract any passers-by. Oh! there is no end to the fowler's abominable wiles. And a pathetic part of it is that these fowlers are oftentimes the most simple-minded men of the peasant order, who seem entirely unaware of the acts of cruelty they are committing, and are as astonished to be told it is so, as an Englishman would be when ratting.

At any rate, even although we may in many respects live in a glass-house, one can hardly conceive it possible for a large majority of English bird-catchers to deliberately burn bird's eyesight away, although I should add that even in Italy such an abomination is illegal; but it is one thing to make a law and quite another to obey it, or wink at the disobeying of it.

Italy, however, is not wanting in men and women who are striving to change the order of things. Perhaps the prime mover is Professor Giacinto Martorelli, an honorary member of our Society, and head of the Trnati Collection in the Natural History Museum at Milan. Writing to me on the 21st of October in answer to a letter of mine in which I deplored the destruction of migrants in Italy, Professor Martorelli says:—"I am absolutely "and totally in agreement with you and with all enlightened "foreigners in deploring and condemning the extermination of "the birds which is going on in Italy, and I am endeavouring to "bring forward certain 'propaganda' along with many others "who deplore this destruction, for putting an end to such barbarous acts."

This is good hearing. We indeed wish Professor Martorelli all success. The task he has set himself is not an easy one, for he has to fight with prejudice, selfishness, and an hereditary habit handed down through many generations.

At the Roccolo which I visited, I counted at least one hundred and fifty birds which lay dead in a promiscuous heap on the floor of the watch-tower, all of which had been killed in two days. Think of it! and there were certainly seven separate roccoli *within sight*. Is it then any exaggeration to say that Italy destroys in October and November alone of every year, thousands



TOWER OF ROCCOLO.

and thousands of song birds and birds that are eminently useful for the benefit of the agriculturist.

The proprietor of the Roccòlo which I visited told me that he had during that week taken 500 birds, and that such a number was a fair average at each Roccòlo. On asking how many there were in the immediate neighbourhood, he said "twelve," within easy walking distance. This means the destruction of *at least* 5,000 birds weekly in that one small area. What must it then be throughout the whole country? Another fowler told me that last autumn (1910) he took 10,000 birds, and his Roccòlo is quite small and comparatively insignificant.

The heap of birds' bodies that I saw consisted of Starlings, Tree (or Mountain) Sparrows, Linnets, Greenfinches, Chaffinches, Goldfinches, Hawfinches, Serin Finches, Redstarts, Blackcaps, Robins, Song Thrushes, Blackbirds, one Nutcracker, Blue and Coal Tits, and others, such as a Fieldfare and a Redwing.

The great migration of Robins had not yet commenced, but in another week or two it would be a usual thing to see men walking in the streets of the country towns carrying a bunch of dead Robins as large as a football. Only the other day, a man came to my door to ask whether I wanted to buy any birds for the table, holding up a cascade of dead Goldfinches [*what* a rosary!] of which there must have been *at least* three hundred. How there are any birds left puzzles one! That man didn't *linger* at my door, you may be sure.

That Roccòlo haunts me. As I stood on that wooded eminence in the stillness of the autumn day, the glassy lake of Como sweeping away into the far distance below me, the grandeur of the surrounding mountains towering above me, their wooded slopes now tinged with every shade of autumnal tints reflected in the blue-green waters, I thought indeed how vile mankind can be. So still was the air, that one heard the approach of the migrants, flitting, flitting to their death. Up rose the fowler again, the wicker racquets hurtling over the bower, the quick dive downwards of the birds, the fluttering of entangled wings Andiamo! Let us go!!

THE BLUE ROBIN.

Siala sialis.

By KATHARINE CURREY.

There is a peculiar charm about the Blue Bird of America, not only in its wild state, but as a companion and pet—the little bird with the bright brown eye and the colours of the earth and sky, so exquisitely described by John Burroughs, the Nature poet par excellence, in his little book called “Wake Robin,” and others of his works. In “Birds and Poets,” he says: “It is sure to be a bright March morning when you first hear his note,” and that note he describes in a charming sentence: “A note that may be called the violet of sound, and as welcome to the ear, heard above the cold, damp earth, as is its floral type to the eye a few weeks later.” Lowell writes of

“The Blue bird shifting his light load of song
From post to post, along the cheerless fence.”

Burroughs further says: “The Blue Bird cannot utter an unpleasing note. Indeed, he seems to have but one language, one speech for both love and war, and the expression of his indignation is nearly as musical as his song.” And he describes the song by the words “pure, pure, pure.”

The colours of the earth and sky of the Blue Robin are described and descanted on by John Burroughs in “Wake Robin” at too great a length to quote in this little sketch. The bird arrives in March, while the snow is still lying about, and truly he embodies in his plumage the whole of his environment, the blue sky, the brown earth and trees, the white snow. To my mind the hen is almost more lovely than her mate. Her forget-me-not blue wing-feathers, and brown and grey shading into pearly-white, of the rest of her little person blend so softly and harmoniously. What wonder the Blue Bird is such a favourite theme of poets. Emerson refers to

“April’s bird,
Blue-coated, flying before from tree to tree.”

Burroughs poem in his “Bird and Bough” is so graphic that one seems to see and hear the little harbinger of Spring in his native haunts:—

“A wistful note from out the sky,
‘Pure, pure, pure,’ in plaintive tone,
As if the wand’rer were alone,
And hardly knew to sing or cry.

But now a flash of eager wing,
Flitting, twinkling by the wall,
And pleadings sweet and am’rous call,—
Ah! now I know his heart doth sing!

O blue bird, welcome back again,
Thy azure coat and ruddy vest
Are hues that April loveth best,—
Warm skies above the furrowed plain.

* * * *

And thy blue wing’s a joyous sight
Among the brown and leafless trees.”

He also mentions the fact that the early settlers of New England gave it the name of Blue Robin, and that “it is the first bit of colour that cheers our Northern landscape.”

‘Wistful,’ I think, exactly expresses the Blue Bird’s note, but though, according to Longfellow:

“Aloud,

From cottage roof the warbling blue bird sings.”

and he speaks of

“The Blue Bird, balanced on some topmost spray,
Flooding with melody the neighbourhood.”

I have never heard them utter more than three notes—always the same—which I can only describe by the words: “Tee-ee-wee!” Sometimes they warbled, softly and sweetly, but they never sang a full song when with me, perhaps they were in a strange land.

Now that the exportation of the Blue Bird from his native land is prohibited—and as a Wild Birds’ Protectionist I rejoice at the law, for a Blue Robin in a dealer’s shop was a sight that tugged at the heart-strings!—his companionship remains only a sweet memory. In years gone by I kept many pairs of them, and they were very intelligent and interesting.

I had several pairs in an aviary on the lawn, where they lived together in harmony, but never nested. This I did not regret, as an aviary-bred bird at best is not equal to a wild one.

The aviary was roofed-in at one end, with shelves far under, and on the shelves I placed little open wooden boxes for them to roost in, for they never slept on a perch. They looked too sweet peeping out of their boxes, and uttering low little 'tee-ee-wees' before going to sleep. One day the aviary door was left open by accident, and they all got out and flew about in the trees. Wonderful to relate, they all came back again, one or two let themselves be caught quite easily. I fed them on all the insects, beetles, worms and grubs, and on potato, bread and carrot, with a little egg food, berries and ants' eggs. Every other day they had scraped meat.

Some of my Blue Birds suffered from a disease in the feet that caused them to swell terribly. I was told it was a parasite, but though I tried all the remedies I knew of, and asked an expert's advice the disease was never cured. Once I rescued a poor old ragged hen at a dealer's. She had been evidently quite wrongly fed, and had suffered much and needed care and nursing. After tending her for a little time, I turned her in with the others, and there chanced to be an odd cock among them. The other pairs looked askance at her, and would not let her feed, but the cock took her part, and prevented her from being bullied. It was surely pure chivalry on his part, for she was old and ragged. She died in a moult, and the cock mourned and missed her.

I kept once a single pair, in a half-free state through the winter. They had a large aviary-cage to live in, roofed-in at one end in a South window, with nesting-boxes and holes to enter them by. In them they slept. By day the cage-door was left open, and they could fly about the house, perching on a large branch that rested on the roof of the cage and reached up to the top of the window. They ate out of my hand, and came to my call, and warbled their cheery little notes all day long. The wild Robins, who fly about in and out of the house as soon as summer is over, were very jealous of them, but they did not fight. The Blue Birds seemed to regard them as a big dog does a little one, and perhaps they recognised that they were in their own country, whereas they themselves were foreigners.

NESTING OF THE LAUGHING KINGFISHER.

Dacelo gigantea.

By R. COSGRAVE.

I feel sure that the readers of the *Agricultural Magazine* will be interested to hear of the successful breeding of the above species. I believe it to be the first occasion that these birds have reared young in this country.

About the 20th of last April the pair showed unmistakable signs of nesting, taking possession of a box, which had been put for some Alpine Choughs. They removed all the nesting material that it contained; when I gave more of different kinds it was at once removed, still they did not place anything in the box of their own choice or settle to nest in earnest. It occurred to me that the box was not large enough and that I was not giving proper nesting material, so I procured another box, 18in. by 12in., with a large hole in front to allow the bird to go in and out with ease. For nesting material I got some decomposed wood and broke it up fine, and this was placed in the box to a depth of about three inches. The box I next nailed securely against the wall of their indoor compartment, about nine feet from the ground. They at once took to this, and on May 10th, one pearly white egg, about the size of a Bantam's, was laid. two more were added on alternate days, and the birds commenced to sit at once. Incubation lasted twenty-one days, both birds taking equal share of the work. On the 19th day, finding both the birds off the nest longer than usual at feeding time, I determined to look and see if all was going well, but met with disappointment, two of the eggs had vanished, not the slightest trace of them could I find. My hopes were destroyed for the time being, for I felt sure that the remaining egg would share the same fate. However, it was not so, the birds went on sitting, and on the 21st day we could hear the young calling in the nest. When the birds were off to feed I took a very hurried glance, but enough to see that the young was perfectly naked. After ten days I had another look and found that it had grown well, it was standing or sitting upright and looked like a young Owl or a ball of white wool. In case of doing harm I did not look at it again until it was three

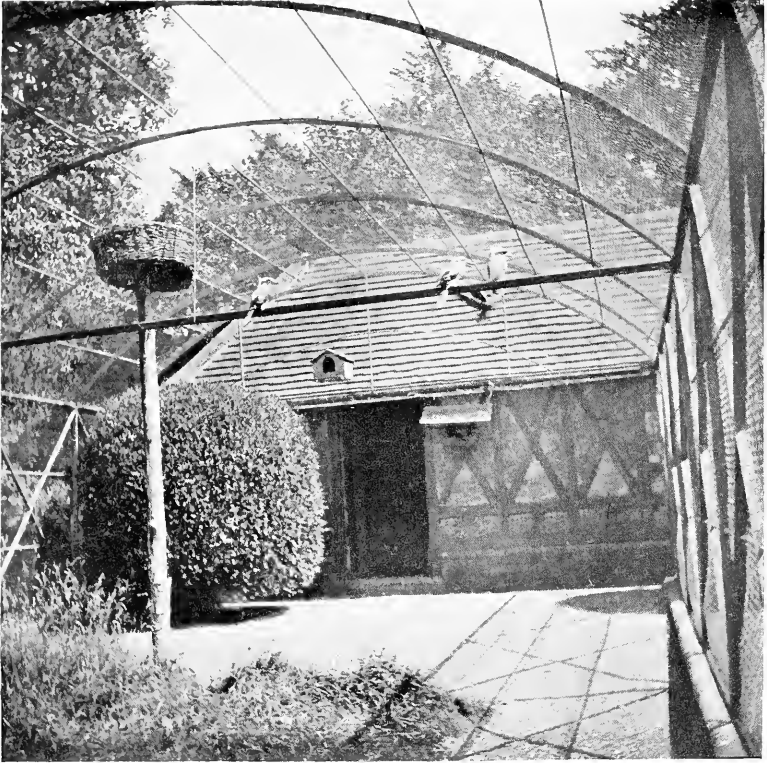
weeks old, this time it had developed well and had feathers all over the body. The wing feathers were well advanced, and when looked at on the last two occasions it made a very loud terrified noise, which caused the parents to investigate and me to beat a hasty retreat. Consequently it was not possible for me to take proper notes and I must apologise to our readers accordingly.

When four weeks old the youngster left the nest, and immediately joined its parents in the outer flight, flying with ease on to the perches, which are seven feet high, and occasionally resting on the ground under a large Box bush to shelter from the extreme heat. We never saw it go back to the nest; it would, however, occasionally fly indoors but only for a few minutes at the time.

It appeared to me astonishing the amount of food that was required during the day to keep the little one quiet. I gave as large a variety as possible, which consisted of all caterpillars that I could get, mealworms, very small pieces of fresh fish, mice, rabbits, sparrows, sheep's heart, well-cleaned gentles and small frogs. At the age of four weeks it could eat small mice whole, and when a large mouse was given, it was amusing to see how it would be knocked against the perch, after the manner of the parents going through the process of killing. I have never once seen the female feed the baby. She sat on the perch calmly looking on, and sometimes she would have a good hearty laugh by way of approval of the way her mate carried out his domestic affairs.

Although the baby could fly well when it emerged from the nest, its tail-feathers had only grown about one inch. This I consider worth mentioning, as doubtless the reason is that they would get broken or badly soiled in the nest. The bill is all dark brown; eyes, black; feet, flesh colour; breast and all underparts creamy-white, thickly covered with very fine light brown, horizontal bars; mantle and wings like the parents with one exception, instead of blue on the wing-bars it is light grey.

I need hardly say that the old birds are very proud of the young, and do not hesitate to have a go at any bird that ventures too close to it, even making most determined stoops at a six-foot man who usually attends to their daily wants.



LAUGHING KINGFISHERS AND THEIR AVIARY.

The photograph has been enlarged, and shows the parents and young, but not as clearly as I would wish, owing to the height of the birds who refused to take a lower seat.

A JAY NEW TO AVICULTURE.

Calocitta lidthii.

By HUBERT D. ASTLEY, M.A.

On the 15th or 16th of November, Mr. A. E. Jamrach received about ten Jays from the Loo-Choo Islands, of which I purchased a pair. They are *Garrulus* (or *Calocitta*) *lidthii*, and look as if they are closely related to the Hunting Crows, or Cissas.

They are strikingly handsome. About the bill and throat, the feathers are black, merging almost immediately into a beautiful deep bluish-purple, which colour covers the head and neck, as well as the wings and tail; the back and lower part of the body being a rich vinous-chestnut, suffused with purple in certain lights. The outer tail-feathers have white tips, as well as some of the secondary wing-feathers. The shoulders (scapulars) show jay-like bars of two shades of the purple-blue. The feathers on the throat are lanceolate, having white shafts. The bill is pale horn grey-green, merging to horn white at the tip; legs and feet bluish grey; eyes deep brown.

Like the Cissas, they are very active birds. For many years it seems that the exact habitat of this beautiful Jay was unknown; it was said to come from Japan, or from some island near that country.

The Loo-Choo, or Purple-headed Jay, might serve as a name to distinguish it. It was called after Professor von Lidth de Jeude of Utrecht.

I also bought a very tame specimen of *Garrulus bispecularis* (or *sinensis*), which is found in China and parts of Asia. It is very like our English Jay, but the whole head and body is pure cinnamon, and the blue and white barring on the wings is more extended.

This Jay is I think rather smaller than its English cousin, and of a finer build.

RED GROUSE IN CONFINEMENT.

By H. WORMALD.

In the early Spring I obtained four pairs of Red Grouse from the experimental Grouse farm at Frimley, and of all game birds that I have kept, Grouse have proved themselves by far the tamest and most interesting, and have the great merit of being tolerably easy to cater for. I understood that at Frimley the birds had been provided with heather daily, so at first I had to get them a bunch every day, besides wheat and dari, but I have gradually reduced the heather and now they only have it once a week, and I hope in time that they will do without it altogether. The birds were very tame when they arrived, and the next day were quite at home, the cocks crowing vigorously all day, with their supraorbital combs fully extended and quite ready to attack anybody who went near them.

In the Spring, when displaying to the hens, cock Grouse drop their wings and spread their tails and run round the lady of their choice with their necks stretched out. When crowing, they stand fairly upright with neck stretched out, gradually raising themselves until at the end of the crow they are standing on tip toe and nearly falling over backwards. At the end of a fortnight the hens showed signs of wishing to go to nest, so I fixed a thick mass of heather in one corner of each pen, and in a day or two all four hens commenced laying under the bushes of heather, which were thick enough to keep out all rain, hail and frost. They laid on alternate days, and when they had about six eggs each I removed four from each nest and placed them under bantams, subsequent events proving that it was very fortunate that I had done so. The Grouse continued to lay until they had each deposited some ten eggs, when they commenced to sit; they proved themselves very close sitters and all went well for a fortnight, when one night a stoat or a rat (I never discovered which) got into the aviaries and killed two cocks and all the sitting hens, besides breaking the eggs. On discovering the havoc next morning, I could do very little except walk round the aviaries, speaking "winged words" about vermin in general, and taking steps to ensure the safety of the two remaining cocks. Fortu-

nately I had the eggs under the bantam to fall back upon and, after twenty-one days incubation, these all hatched out except three. It is interesting to note that these eggs took twenty-one days to hatch, as it is generally considered that the period of incubation is twenty-four days; in fact, eggs which were sent to me from Scotland some years ago took twenty-four days to hatch.

The newly-hatched chicks are most charming little birds, very thick set with beautiful yellow down, with rich brown markings, and "furred" legs and toes. I fed the chicks on fresh heather shoots, Spratts' Maxco, hard-boiled egg and maggots. They grew extraordinarily quickly, and out of one of the broods of six I never lost a single bird; they began feathering when about three days old, and on the ninth day, primaries, secondaries and both wing-coverts were well developed; tails coming in and scapulars growing fast. They flew well when little bigger than sparrows. I did not lose any birds after they were a week old, and by August 12th, they were every bit as big and strong as wild birds, and in just the same state of plumage.

One great point to remember in rearing young grouse, black game and capercaillies is that full sun is fatal even to half-grown birds; to guard against this I had some low, movable covered pens made, about 30in. high, 12ft. long by 6ft. wide, boarded half up the sides, and with wire netting tops. I then spread a thick layer of grass, green boughs, etc. all over the tops of the pens, so that practically all the interior of the pens was in the shade, and when it did happen to rain (a rare occurrence this tropical summer) the young birds kept nice and dry. Grouse, young or old, must never be without grit, that is a golden rule, (quartz grit will be found to be the best), grit has been found in a grouse chick only thirty hours old! When half-grown the chicks began to take to dandelion leaves, spinach, chicory, etc., and were always very fond of any insects. Quite little chicks would wrestle with fat yellow under-wing moths, and earwigs were very popular.

One interesting point which I noticed, and recorded in a recent number of the *Field*, is that young Grouse grow three tails in succession before they are five months old. *i.e.* their first baby tail which shows when the chicks are nine days old, this is

retained until the birds are a fair size, and is then replaced by a black tail which they wear until after they are quite full-grown, and is dropped about the middle of September, the outer feathers on each side being the first to fall out; in about a month's time this tail is fully developed, and is black and the feathers stronger in the quill than the feathers of the second tail were. This tail is worn until the moult in the following year. At the end of October both old and young cocks go through a sort of half-hearted spring display, but their supra-orbital combs are not so fully extended or of such a brilliant orange scarlet as in the spring.

Blackcocks meet at their playing-grounds and strut about purring at this time of year for a week or two, and cock pheasants frequently give their spring crow and whirl their wings, but apparently it is not considered by the birds nearly such a serious business as in the spring, and I am not at all sure that the grey hens put in an appearance at all at the playing grounds in October.

I have not had my adult Grouse long enough yet to make a definite statement over the vexed and much discussed question of their moults, though I expect to find that they go through three distinct plumage changes in the year.

Grouse are very liable to become afflicted with gape worms; to guard against this I fumigated my chicks every week after they were ten days old, and fortunately none of them ever showed any signs of having gapes. It is not my intention to enter upon a dissertation upon the disease here, but I strongly recommend everybody who is interested in rearing game of any sort to shoot every Sparrow and Starling which they may see showing any signs of having gapes. I am certain that these pests are carried and spread from one rearing field to another by these birds. Comparatively little is definitely known as to how the worm first gets into the bird; although there are many so-called "cures" I do not believe that a really satisfactory cure can be obtained until more is known of the life history of the worm, and I am glad to say that at least one well-known scientist is working now at the subject. Most of the game food providers sell tins of gape powder for fumigating purposes; plain tobacco smoke is very

effective, but it is very easy to give too much and kill the bird outright.

Altogether, out of eighteen chicks hatched, I reared eleven to maturity, but unfortunately all of these, except four, have turned out to be cocks. I separated all the cocks in October, as they began to fight, the hens were paired off, and the odd cocks placed in pens by themselves. I introduced a hen Ryper to one of the young unattached cocks, and even in October he nearly killed her with his attentions, so that I had to separate them again; however, if I cannot obtain some hen Grouse before the Spring I shall try them again with Rypers, which I am convinced are nothing more or less than Red Grouse, upon whom climatic conditions have brought about changes of plumage, and I am certain that all signs of the Ryper parentage could be bred out of the hybrids in a very few generations.

With Grouse, as with all other birds, it is essential that the food and water vessels should be kept scrupulously clean, they are very apt to let their droppings fall in their water and food, and it is very injurious for them to eat soiled food and drink fouled water. Grouse deposit two distinct kinds of excrement, the one dry and often quite hard, the other much more fluid and looks like dark slimy paste. Some people think this latter excrement is a sign of ill health, but that is an erroneous view, as a matter of fact every healthy Grouse excretes both forms of droppings, the dry firm droppings pass straight from the main gut, and the soft pasty excrement follows shortly after from the caecal appendices. The amount of excrement dropped by a Grouse during one night is often very surprising.

Grouse, like all game-birds, delight in a good dust bath, and this should always be provided in the shape of a heap of dry sandy soil.

In concluding these notes it may be as well to give a brief list of what is essential and what should be avoided.

Essential: Clean food and water; food to consist of wheat and dari, also some heather (unless the birds when obtained have been weaned from it by degrees), green food of some sort—cabbage, lettuce, chicory, dandelion, grass, spinach, etc.—plenty of grit, a dusting bath and as large an aviary as possible.

To be avoided: Full sun when young, dirty food vessels, the sudden appearance of strange dogs and cats, guard against gapes as far as possible and overcrowding and subsequent fouling of the soil.

All the aviaries should be rat-proof. I have found the following method of dealing with rats most successful. Stop up all holes for a night or two to find out which are used, then soak a small piece of cotton wool with Carbon-Bisulphate, push it as far down the hole as possible, leave it for two or three seconds and then drop a match into it, there will follow a small explosion, instantly block the hole up with a sod, and the inmate (either rat, stoat or rabbit) will be poisoned by the fumes, care must be taken not to inhale the fumes while blocking the hole; this method may be employed with perfect safety in a crowded aviary.

EDITORIAL.

I should like to take this opportunity of tendering my most hearty thanks to those members who have so considerably helped me in my Editorial duties during the past year, by providing me with such interesting and often valuable "copy." In the list of contributors will be found many names which have not previously appeared there, as well as many old friends to whom we are already under obligation. To both we send our heartiest thanks, and hope they will consider it in the light of the highest compliment that we unblushingly ask for more! If only each member of the Society would send in just *one* article in the course of the year what a delightfully easy post that of Editor would become, and what a mass of information on aviculture would be recorded for future bird-lovers!

With the January number of last year we commenced the series of articles on Practical Bird-Keeping, and, from the appreciative letters received from our members, I am glad to know they have been helpful and instructive. We have still two or three more to add, and then our intention is to publish the whole as a small Manual of reference.

It has been suggested that the next series of such articles

should deal primarily with the subject of *Aviaries*, and how best to plan and lay them out for different species of birds. I would much like to have the opinions of our members on this suggestion, and would also be glad to receive offers of contributions on the subject from both those members who have been fortunate enough to have, through success, learnt what to aim at, and also from those who, after many trials and failures, have learnt at any rate what to avoid.

I think the subject should prove a good one, and information derived from experience is always useful and of the utmost value to those who are just commencing to go through the mill. I suppose we can all of us remember the care and devotion spent in our early avicultural days on buildings and cages, which have afterwards turned out hopelessly unsuitable and disheartening, and when we realize how easily we might have avoided waste of money and time, we shall welcome the opportunity of enabling others to take advantage of our knowledge. Even the expert is not too old to learn, if he or she is a wise expert, and I think an interchange of ideas of this very important part of aviculture might prove of great advantage to one and all.

There is one other matter I would like to mention. In the list of members it would seem that our numbers are lower than they were at this time last year, but in reality this is not so. Our membership has increased, but on our books were the names of certain numbers who had ceased to pay their subscription but who had not sent in their resignation. Several of these had gone abroad and not sent their change of address, and we have considered them dormant, but after a due allowance of time we have now removed their names, and if they wish to rejoin they must pay a fresh entrance fee.

Financially, we are in a better state than we have been for some time. At the beginning of the year a member most generously offered to be responsible for any deficit we might have up to £10, and I am glad to say we have not been obliged to call upon him for a single shilling. Nevertheless, there is no denying that an addition of another fifty members would place us in a very much more comfortable position, and those members

who cannot assist us by notes or articles can do us a very great service by introducing the Society to the notice of their friends.

Wishing all our members the best of avicultural good fortune in 1912.

Yours very truly,

THE EDITOR.

CORRESPONDENCE, NOTES, ETC.

THE GREY THRASHER (*Harporhynchus cinereus*).

SIR,—I have received a pair of these 'Threshers' (or Thrashers) which are inhabitants of Mexico, I believe. They have a greyer tinge than the Thresher which is found in the United States (*H. rufus*)—the Brown Thresher as it is called. These birds are of the size of a Song Thrush, with longish curved bills and eyes which look as if they had been purchased at a taxidermist's establishment, very yellow and staring with black pupils. The chin is dull white, the upper plumage mouse brown with a greyish wash, and the underparts spotted in a Thrush-like manner, but the spots are closer and more clouded.

The Thrashers are supposed to be good songsters, at any rate the brown one of the United States has that reputation. Mine are very sprightly birds, and seem to do well on an insectivorous mixture with some fruit and a few mealworms. The male is distinguishable by a more curved bill and a more thickly spotted breast, besides which the whitish chin is more distinct. The tails of these birds are on the elongated side.

The Harporhynchi are classed with the family of the Miminæ (Mocking Birds). They are usually found in arid situations, placing their large flattish nest of coarse twigs, leaves, fibres, bark, grass and moss, lined with softer materials, in low trees or thorny scrub.

They are naturally shy birds, but would probably become tame in captivity. They have strong feet, built for clinging well.

The generic title is derived from the Greek ἀρπη, a sickle; and ῥύγχος, bill.

HUBERT D. ASTLEY.

ERRATA.

SIR,—Some errors in my report on the I.C.B.A. foreign birds have unfortunately escaped correction, as follows:—

p. 61 *galgulas* should be *galgulus*.

„ “abnormally coloured prize birds” should be “abnormally coloured foreign birds.”

„ *Tonygnathus* should be *Tanygnathus*.

- p. 62 "Grasshoppers" should be "Grassfinches."
 „ *Drepanoplectes* should be *Drepanoplectes*.
 p. 63 *Parsaria* should be *Paroaria*.
 „ "Yellow-bellied" should be "Yellow-billed."
 „ "Necklace" should be "Black-throated."
 „ *Arachechthra* should be *Arachnechthra*.
 p. 64 *alsahige* should be *akahige*.
 p. 65 *homadori* should be *komadori*.
 p. 65 "belt and feet" should be "bill and feet."
 p. 66 "was orange" should be "were orange."

FRANK FINN.

[We have to apologize to our readers for the mistakes in Mr. Finn's article. This was partly due to the article having to be inserted at the last moment.—E.D.]

REVIEWS.

DESERT ISLANDS.*

Those, whose good fortune it is to visit out-of-the-way corners of the world where Nature, untrammelled by man, still holds undisputed possession, frequently, when writing of their experiences, fall into one of two errors, either the book is so full of their domestic worries and the difficulty they had in cooking their breakfast or shooting their dinner that they quite omit to adequately describe the country, or else they record in impersonal language of unimpeachable scientific accuracy exactly what they see, without investing the story with any touch of their own personal thoughts or sensations.

Between these two extremes, Dr. Lowe has steered an admirable course. Small personal details of no real importance, except to lend a personal and human touch to the book are there, but they are never allowed to intrude or take away from the descriptions of the desert islands visited. To render the narrative still more attractive, the author gives us an insight into his own thoughts and speculations. His account, for instance, in Chapter IX. where he discusses the all-important problem of how bare rocks, rising from mid-ocean, came to receive their

* *A Naturalist on Desert Islands*, by Dr. P. R. LOWE. 8vo., 300 pp. and numerous photographs. London: WILHERBY & Co. 7½ net.

terrestrial inhabitants is worth the careful thought of all interested in such problems, whilst it is written in such a clear style that the veriest tyro can understand the main features of the problem. Another analogous point is discussed on p. 208, where the author points out that three distinct species of Gannet are found living and nesting under precisely similar environment, and he asks pertinently why these species should, from the similarity of their food, habits and environment as well as their isolation, still have retained their individual characters and be exactly similar to their relatives on the other side of the globe. The answer to such questions is of course not possible in the present state of our knowledge, but to emphasize such facts in a book like the present not only adds to its charm but raises it from a mere narrative to a book of scientific interest. The islands described are all situated in the Caribbean Sea, and were visited in Sir Frederic Johnstone's yacht. Birds form the author's chief hobby, but details on all forms of life, from the minute coral to the huge Devil Fish, are included.

Having ourselves sailed those seas and visited desert islands, surrounded by living halos of birds and mythical halos of buccaneers and buried treasure, we have been able to appreciate to the full Dr. Lowe's narrative, which we can most strongly recommend to any of our members who like to read of Nature unspoilt by man.

THE OSPREY.*

This is another book of bird photos., uniform with those of the Golden Eagle and Spoonbill. The Osprey can, unfortunately, no longer be studied in Great Britain, but Americans are more fortunate, and several large breeding colonies of this species are to be found along the Atlantic coast, and a few pairs still, so we are told, nest or try to nest within the limits of New York City. In its gregarious habits during the nesting season, and because it frequently nests low down or on the ground, the American form lends itself to the needs of the

* *The Home-Life of the Osprey*, by CLINTON G. ABBOTT, B.A. 54 pp. and 32 plates. London: WITHERBY & Co. 6/- net.

photographer, and Mr. Abbott has fully availed himself of these opportunities.

The letterpress is well written in an entertaining fashion, and contains several yarns about the home-life of the bird, as told to the author by various fishermen and others with whom he came in contact, though he does not of course vouch for their accuracy in points of detail.

The feature of the book is the photographs, which are excellent and have been beautifully reproduced. They show young in all stages, from the time they leave the shell till they are full grown and well on the wing, and there is also a varied selection of photographs of nests, showing the many different situations chosen, such as a small bare rock, standing out in the sea, on the beach, on trees, on a fence and on a telegraph pole. In fact, with the exception of a picture of the eggs, which ought, we think, to have been included, the photographs give a graphic description of the bird and its actions during the most interesting period of the year, and to those interested in the habits of birds, rather than their dried skins, we confidently recommend this book.

THE GREAT AUK. *

The Great Auk owes much of its popularity as it became extinct so recently that, prior to that event, enough was known to whet the appetite for more, and in addition it was a British bird. The pamphlet before us forms a most useful record of the sales of its eggs or skins in England that have taken place during the last hundred years. The highest price given was £350 for the egg which is now in the Royal Scottish Museum, and the lowest 12/- or 17/- for an egg purchased for the British Museum in 1819. Two notable bargains have been made in these eggs, two being purchased in Edinburgh in May, 1880, for 32/- and sold on the following July for £207 2s. In the second case, two were bought amongst a lot of 'shells and fossils' for 36/- in March, 1894, and sold the following month for £462 15s.! The price of all eggs

* *The Great Auk*. A Record of Sales of Birds and Eggs by Public Auction in Great Britain, by THOMAS PARKIN, M.A. Hastings: BURFIELD & PENNELLS, LTD. Price 2/-.

is not always on the upgrade, as one purchased in 1899 for £315, only fetched £110 a few years later.

Stuffed birds have come into the market less frequently, the last, sold in April, 1902, realising £315. Ornithologists owe Mr. Parkin a debt of gratitude for putting on permanent record these interesting particulars.

NORTH'S NESTS AND EGGS.*

We have received Part III. of Volume III. of this important work, some of the previous parts of which have been noticed in this journal. The present part deals with the Order Accipitres, a group which is not of great interest to the general run of aviculturists, as few of the birds of prey are really satisfactory in captivity. When wild, however, this is the finest group of all birds, and in Australia it is well represented.

Mr. North gives exhaustive accounts of the nesting habits of the species with which he deals, with field notes from all parts of the Commonwealth.

One of the most extraordinary of Australian raptorial birds is the White Goshawk whose plumage is of the purest white all over, rendering it extremely conspicuous. Mr. North considers it one of the most useful of the Accipitres, feeding largely upon insects, the contents of stomachs examined consisting principally of this kind of food. It is, however, gradually becoming scarce in many parts, its conspicuous plumage making it an object of pursuit to the gunner whenever it is seen, a fact which is much to be deplored.

TALKS ABOUT BIRDS.†

Mr. Finn is so well-known as an author of reliable books on birds that he needs no introduction to our members. This, his latest book, is intended primarily for young people, but there

* *Nests and Eggs of Birds found breeding in Australia and Tasmania* by ALFRED J. NORTH, C.M.Z.S. Vol. III., part III.

† *Talks about Birds* by FRANK FINN, B.A., F.Z.S.
London: ADAM and CHARLES BLACK, 1911. Price 6 -

is a great deal of matter therein which will provide instruction for those of riper years, and whose knowledge of birds is not of the most elementary character. The first chapter which is headed "Where our Poultry came from" is really of great interest as the author therein traces the history from remote times of most of our domesticated species of birds, while in "Birds under Water" he deals with the various swimming attitudes of birds which procure their food beneath the surface of the water, and their adaptation to their mode of life. There are fifteen chapters dealing with such subjects as "Birds in Training," "Birds at Play," "Birds at School," "Birds at Night" and so on, the book running to 235 pages.

The object of the book is to direct the attention of beginners in ornithology to interesting subjects in connection with the life of birds—to make them observant, and we feel sure the book will fulfil the object of its author.

It contains thirty-six illustrations, sixteen of which are full-page in colour.

PRACTICAL BIRD-KEEPING.

XI.—THE FEET OF BIRDS IN CAPTIVITY.

By KATHARINE CURREY.

Caged birds very often suffer in their feet, and, after many years of bird-keeping, I have come to the conclusion that a bird's foot can be made and kept quite sound and healthy (provided of course there is no hopeless crippledom or disease) by fulfilling two conditions—a constant supply of fresh *earth*, as well as sand and gravel, and giving the bird the opportunity of changing the position of its feet and toes.

A bird's foot needs exercise as much as a human hand. Watch the wild bird in a tree, how constantly he changes the position of his legs and feet. Now the foot is spread out; now tightly clenched round a slender twig: now relaxed as he grasps a bough; now he hangs upside down, suspended by his feet; now holds on to a bough astant, one leg drawn up, the other

stretched out—always a change of position. If a bough is not placed in a cage, then the perches should be of different sizes, and some slanting, some almost upright. Further, I have often noticed that a wild bird chooses a living branch to perch on in preference to a dead one. Is it the electricity in the living bough that responds, in some way, or the electricity in the bird's foot, or is there a subtle warmth in the live wood that is agreeable to the touch? The fresh earth seems to me of almost equal importance for the feet.

Earth has a magnetic healing influence, as well for birds as for man, and I have found the effect of daily contact with fresh earth wonderful for weak or suffering feet of birds I have kept. That and the daily bath of fresh water; whereas the feet of birds I have kept in an aviary with a cemented floor have not been in a satisfactory state, though I kept the floor well gravelled.

An earth-floor to an aviary can be made rat-proof by a small-meshed wire netting bottom to the aviary, two or three feet below the ground. The easiest way of placing such an aviary in position is to dig out the earth to the size of it, and sink the aviary in, filling in the earth that has been dug out, up to the level of the ground. The earth can be raked over every day, and fresh earth added, and patches of grass laid in part of it, forming a happy hunting-ground for worms.

I am quite sure that the more of natural surroundings we can give the birds the healthier they will be. And we owe them this if we deprive them of freedom.

NOTICES TO MEMBERS—(Continued from page ii. of cover).

NEW MEMBERS.

Dr. C. B. TICEHURST, Grove House, Lowestoft.

Mr. E. E. COOPER, Berrydown Court, Overton, Hants.

CANDIDATES FOR ELECTION.

Mr DUDLEY LE SOUEF, Zoological Gardens, Royal Park, Parkville,
Melbourne.

Mr. ALFRED EZRA, 110, Mount Street, W.

Proposed by Mr. R. I. Pocock.

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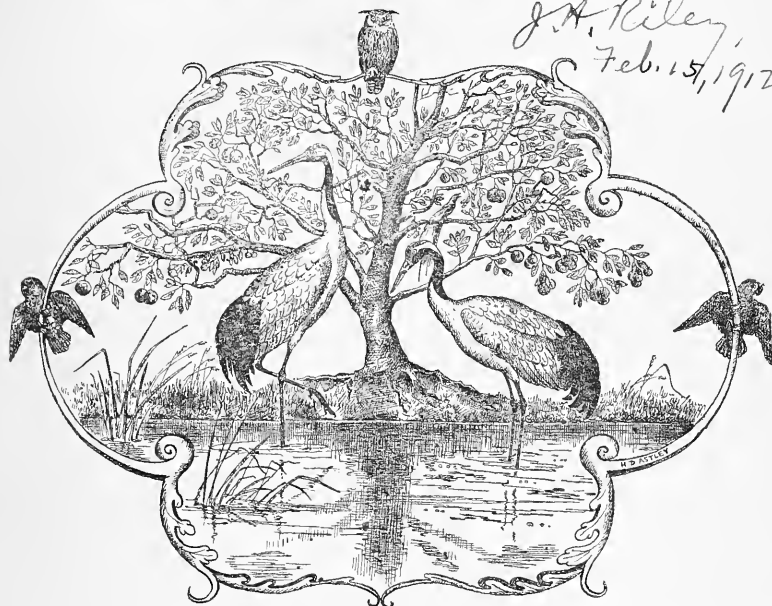
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J. H. Riley
Feb. 15, 1912



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All Queries respecting Birds (except *post mortem* cases) should be addressed to the Honorary Correspondence Secretary, Dr. A. G. BUTLER, 124, Beckenham Road, Beckenham, Kent.

All other correspondence, should be sent to the Honorary Business Secretary, Mr. R. I. POCCOCK; Zoological Society's Gardens, Regent's Park, London, N.W. Any change of address should at once be notified to him.

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THE SECRETARY BIRD
(*Serpentarius secretarius*).

West, Newman proc.

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FEBRUARY, 1912.

SOME NOTES ON THE SECRETARY BIRD.

Serpentarius secretarius.

PART I.

By MAJOR HORSBRUGH.

Having kept this curious bird in confinement and having had, at the same time, opportunities of observing it in Nature, the following notes will I hope prove of some interest to some of our members.

Description. Its curious shape and plumage of grey and black (well shown in the accompanying photograph of a bird in Mr. St. Quentin's aviary) is too well known to need a detailed description, and I need only note that the length of an adult female Secretary Bird is about 58 inches. The male is slightly smaller.

Distribution. It is found all over South Africa, wherever the country is dry and open, and extends to Upper Egypt in the North and Gambia in the West and Abyssinia in the East. Birds that I have seen from Egypt had red ceres, while the South African species had yellow ceres, so I presume the Northern birds belong to a sub-species.

Habits. Secretaries in South Africa live in pairs as a rule; the same pair haunting the same big tract of country year after year and using the same nest each season unless disturbed. Even if the eggs are taken they will frequently lay again in the same nest. The nest is a huge structure, placed as a rule in some big camel-thorn or acacia, where it presents a landmark for miles around. One nest, from which I took a young bird, its sole occupant, was strong enough to support my weight as I sat

in it, and was woven together almost as tightly as an English Magpie's nest.

When the young are able to get their own living, the parents follow the custom of other big Raptors, and drive them off to find beats of their own.

The Secretary, as a rule, is entirely terrestrial, and must cover many miles each day getting its food. They can, however fly well, and I have occasionally seen them high in the sky, soaring about like any eagle or vulture. It is quite a common sight to see a pair striding along with their easy stately walk, each bird looking like an old gentleman in short black knickerbockers with his hands behind his back under his coat-tails. Every now and then one will give a quick stamp on the ground and slowly sit down on the whole length of the tarsi and pick up a locust, beetle, or other small game. A mouse or lizard may take cover in a tiny cactus or thorn clump, but he is doomed if the quick eye of the great bird has seen him. Stalking swiftly up he gives one side of the clump a sharp smack with his rattling wing, bounding like lightning to the other side and bringing his unerring foot on his game as it bolts.

Secretaries have enormous appetites. Some young ones I reared would eat as many as nine doves (*Turtur capicola* or *senegalensis*) each every day. These doves used to haunt the Government Poultry Farm in Potchefstroom in hundreds and devour the chicken food, and were shot by the manager and thrown away till I put in a claim for them.

Secretaries are great egg-eaters. I came on the scene one afternoon as one of my tame birds was finishing off a clutch of nine guinea-fowl eggs he had discovered in the lucerne patch; a child, who was with me, remarked that it was like putting pennies into a money-box as you could hear them clink as they went down. No doubt in the wild state they are terrible foes to all ground-breeding birds.

On account of their great activity and vast appetites they require a big tract of country as a hunting-ground. I know of various eyries that were occupied year after year in the Transvaal, but none was within ten miles of another one.

In one case the nest was on top of a wild olive, and within a hundred yards of it was the neat nest of the big Martial Hawk-Eagle (*E. bellicosus*), but as the latter bird is a hunter pure and simple, living on entirely different kind of prey, the two hawks never interfered with each other.

I cannot quite understand why the Secretary is dubbed a vulture—he has nothing vulturine about him,—he kills his own prey in his own fashion and tainted meat seriously upsets him. I look upon him as a large ground Goshawk and not at all as a vulture.

Mrs. Annie Martin, in her “Home-life on an Ostrich Farm,” gives a most interesting account of a tame Secretary she kept, from which I will give an extract:—

“Jacob’s (the Secretary’s) enormous appetite, and our difficulty in satisfying it, were well known in the neighbourhood, and the owners of several prolific cats, instead of drowning the superfluous progeny, bestowed them on us as offerings to Jacob.

“They were killed and given to him at the rate of one a day. Once, however, by an unlucky accident, one of them got into his clutches without the preliminary knock on the head; and the old barbarian swallowed it alive. For some minutes we could hear the poor thing mewling piteously in Jacob’s interior, while he himself stood there listening and looking all round in a puzzled manner to see where the noise came from. He evidently thought there was another kitten somewhere, and seemed much disappointed at not finding it. Jacob was largely endowed with that quality which is best expressed by the American word ‘cussedness’; and though friendly enough with us, he was very spiteful and malicious towards all other creatures on the place. He grew much worse after we went to live up country, and became at last a kind of feathered Ishmael; hated by all his fellows, and returning their dislike with interest.

“Some time after we had settled on our farm we found that he had been systematically inflicting a cruel course of ill-treatment on one unfortunate fowl, which, having been chosen as the next victim for the table, was enclosed with a view to fattening, in a little old packing case with wooden bars nailed

“across the front. Somehow, in spite of abundant mealies
“(Indian corn) and much soaked bread, that fowl would never
“get fat, nor had his predecessor ever done so; we had grown
“weary of feeding up the latter for weeks with no result, and in
“despair had killed and eaten him at last—a poor bag of bones,
“not worth a tithe of the food he had consumed.

“And now here was another, apparently suffering from the
“same kind of atrophy; the whole thing was a puzzle to us,
“until one day the mystery was solved, and Jacob stood revealed
“as the author of the mischief. He had devised an ingenious
“way of persecuting the poor prisoner, and on seeing it we no
“longer wondered at the latter’s careworn looks. Jacob would
“come up to his box and make defiant and insulting noises at
“him—none could do this better than he—until the imbecile
“curiosity of fowls prompted the victim to protrude his head and
“neck through the bars; then, before he had time to draw back,
“Jacob’s foot would come down with a vicious dab on his head.
“The foolish creature never seemed to learn wisdom by ex-
“perience, though he must have been nearly stunned many
“times, and his head all but knocked off by Jacob’s great power-
“ful foot and leg; yet as often as the foe challenged him, his
“poor simple face would look inquiringly out, only to meet
“another buffet.

“As he would not take care of himself, we had to move
“him into a safe place, where he no longer died daily, and was
“able at last to fulfil his destiny by becoming respectably fat.”

Secretaries in South Africa breed during the winter months
(June and July). The usual clutch is three, but I once saw four
birds in a nest. The eggs are bluish white, sometimes marked
with rusty brown and occasionally quite plain. They measure
about 3·05 by 2·25. The young remain in the nest till well on to
the end of September as their legs are very weak and brittle,
and for a long time after hatching they cannot stand, but crawl
feebly about the big platform of a nest on the tarsus.

* * * *

PART II.

By W. H. ST. QUINTIN.

Major Horsbrugh has asked me to add some notes upon "The Secretary Bird in Captivity," as an addition to his interesting and amusing account of the bird, as seen in his African home.

I have kept these birds for about four years, and the first thing that struck me about them was their amazing appetites! I have long been accustomed to keep raptorial birds large and small; and, as a rule, one may say that the larger the bird the less frequent (imitating natural conditions) should be his meals, though of course the meals, when given, must be full ones. In one of our best private collections, where Eagles and Vultures live for years and are in the pink of condition, these birds are fed on four days in the week, but as much as they like each time. On the other hand, the smaller Falcons, Hawks and Owls must be fed night and morning. But the Secretary Bird I soon found, big as he is, does not look his best unless he has a good meal twice a day, and pretty much what he can stow away each time, including fur, feather and bone.

In a roomy enclosure, which can hardly be too big, he takes an immense amount of exercise, striding up and down, always on the look out for a mouse or other small quarry. Even a Blue-bottle fly is not too insignificant for him, while a butterfly causes great excitement, and is pursued across the enclosure, stroke after stroke (of the foot) being aimed at the insect, which is often knocked down and instantly devoured.

If more than one are kept together, they will at times race about in graceful play, which is apt to degenerate into a squabble at any moment, for their tempers are exceedingly short. When in a hurry, they spread their wings wide and hold them at such an angle that, when they stride against the wind, they are lifted off the ground at the end of their run, and suggest the action of an aeroplane, the motor being represented by the bird's legs which, of course, are working energetically.

I pinioned my birds reluctantly, but I had no alternative, for they are light and active, and a ten-foot netting fence is not enough to stop them, unless the wing is shortened sufficiently;

and they are not to be trusted with anything smaller than a pheasant, nor with eggs or young of any species.

My birds are largely fed on rabbit, given in pieces with the fur and bone, also on any rats that are forthcoming, and sparrows: in fact, on anything of an animal nature, so long as it is perfectly fresh.

I have never offered them a snake, but an eel is treated with much caution, and even after being killed by the usual blows from the foot, receives many unnecessary thumps before it is bolted. Although the bird evidently prefers small prey, at least so small that it can be shaken down his capacious throat, he will stand upon anything too big to swallow and tear pieces off; but I doubt it being his usual practice when at liberty to kill anything large.

I entirely agree with Major Horsbrugh that the Secretary Bird shows nothing of the Vulture in its ways, but much more of the Goshawk, as anyone who is familiar with the two birds will soon remark.

One habit I notice, which is unusual amongst birds of prey, is the Secretary Bird's attitude when roosting. He lies down; and my birds, a few minutes after they have been walked into their shelter sheds for the night, may be seen lying on the peat moss litter. In summer, when they are left out, they creep under a bush or spruce fir, and crouch there for the night. The foot is the bird's weapon, whether for disabling his prey or for discomfiting his enemy. Before my other birds understood their novel method of fighting, I have seen an inquisitive Stanley Crane make a hostile demonstration against a "Secretary," only to be thrown backwards a yard or two by the lightning stroke delivered straight at his breast.

Now everything gives way to the Secretary Birds, though I do not call them aggressive, nor even courageous, except with creatures much smaller than themselves. Mine have several times killed for themselves a water hen and eaten it; and once one got into a Wader's enclosure and killed a Whimbrel. But I have seen one striding after a scared grey squirrel, keeping within easy striking distance: but the bird could not make up its mind to deliver its blow, before the little animal reached

cover. They are, of course, quick to kill a rat released from a trap, and he generally gets a tap on the head before he has gone many yards, which effectually settles him.

Unfortunately it is difficult to distinguish the sexes, though as a rule the male is said, following the general rule in raptorial birds, to be rather smaller than his mate. Otherwise I see no reason why these interesting birds should not breed if suitably fed and allowed plenty of room. A pair did lately build a nest more than once at the Zoological Gardens, but they were interfered with by some antelopes confined in the same enclosure. Finally the female, in a high wind, managed to get into the yard of the Ostriches, and was fatally injured by one of the latter.

Major Horsbrugh remarks that examples of this species from Egypt had red ceres, instead of rich yellow, as in those from further south. I have seen in my birds (from the Transvaal) when much excited, a distinct pink suffusion showing through the yellow skin; in fact, it might be said that the bird was blushing! When in a quarrelsome mood, my birds draw the skin of the forehead very tight and flat and elevate the cere; at the same time uttering a gruff roar or bellow, much more like the voice of some angry mammal than that of a bird.

As I am uncertain of the sexes of my examples, I cannot say if this is merely a challenge to combat or a form of sexual display, but I am inclined to think that it is the latter, and that I have two females.

NOTES ON A STORM PETREL IN CAPTIVITY.

By C. B. TICEHURST, M.A., M.R.C.S., M.B.O.U.

As the Storm Petrel (*Procellaria pelagica*) is not often kept in captivity, I thought perhaps a few notes on one which I had would be acceptable to the readers of the *Avicultural Magazine*.

On Nov. 29th, a very foggy day succeeding a foggy night, I had two Storm Petrels brought to me alive, which had been taken on board trawlers about twenty miles east of Lowestoft. One of these died in two days; the other, which when first brought in was quite lively and in good condition and even pecked at everything near it, lived ten days, about the longest I

believe that one has been kept alive. I kept it in a big box in my museum, and during the day it was allowed free use of the room. At the outset the difficulty was to get it to feed; I tried it on shredded fish, meat, and fish liver, and even tempted it with oil floated in a bath which, however, it would not touch. Fish liver in small pieces seemed the best food. Although it picked up the fish liver in its bill it never ate any, always shaking it out; it however ate it if it was pushed well into the gape, and thus it was fed four or five times a day; finally the feathers round the bill got very clogged with oil, and at the end I believe it got some oil in the windpipe, as it suddenly drooped and died. On opening it I found still a fair amount of subcutaneous fat.

I may say at once that the picture in Saunders' Manual is a misleading one; the Storm Petrel *never* stands at rest on the webs, but on the whole length of its tarsus, in which position also it frequently walks, or rather shuffles, the head and neck being kept low; as it gets up speed it gradually raises up on to its webs, but in this position its balance is not good and the wings are frequently raised, no doubt to maintain the balance preparatory for flight. I clearly made out that there are two methods of starting flight, the one by shuffling along on the tarsi and then gradually getting up on to the webs and running along with the wings beating rapidly, the other by rapidly beating the wings vertically and sliding backwards on the ground or progressing backwards if in water; in the latter method, I believe an opposing wind to be necessary to help the bird, and I frequently saw it try to fly by this method when close to the door, under which a considerable draught was blowing.

When in the water (of which it seemed to be very frightened) the motion of the legs was very rapid and alternate, progress however was not quick, and the swimming backwards, as I thought preparatory to flight, was frequently noted; the bird occasionally drank water, and, when swimming, the body "floats high." It never succeeded, while I had it, in raising itself from the ground, but if dropped from a height of some 18 inches would take wing and fly round the room with an uncertain fluttering flight, the wing strokes being short and somewhat bat-like. However, another specimen I had took flight from the

floor of the same room on more than one occasion. Although it was able to rise and steer itself in the air, it never seemed to realize the presence of the wall, but would fly straight into it and then flutter helplessly to the ground.

The bird always shunned light, and when at liberty invariably sought the darkest corner of the room, and always seemed more lively towards evening. I believe the food is found entirely by the sense of smell, and that vision, at any rate in daylight, is poor, for when put in the neighbourhood of food it obviously knew food was there, and, when close to it, it often pecked at it, but in doing so made many bad shots at it before taking it in its bill. The only noise I heard it utter was a soft "chuck" when on one occasion I was holding it.

PET OWLS.

By KATHARINE CURREY.

I have always loved Owls, and one of my early recollections was a very tame Barn Owl, so tame that he came flying when whistled for, and perched on our shoulders or arm. He had a tragic end, poor "Billy," for he fell down a chimney, and emerged in the likeness of a Crow. He died soon after. I have kept Tawny Owls for many years and they are enchanting pets and most sagacious. "Duffles" and wife have lived very happily for years in a very large aviary under some ancient yews, where some sunlight can penetrate, but I think they need more. They perch on the thick branches, and on some poles, and hide behind the old stems. The wire-netting is large enough to admit mice, and I feel sure they catch these for themselves, and also probably young rats.

They are fed every evening, and have a pan of water in case they wish to bathe, as they seem to enjoy a rainy day. They have boxes to hide in during the day. I think their note is most musical and pleasing, flute-like in its soft melody, and I cannot understand why many people find it unpleasant. Alas; some days ago one escaped, by a pure accident. The gardener opened the door to put in a mouse, and the Owl flying at his hand to get it, missed and flew out. It tried to come back to its home, but the rooks chased it away and I was in despair, for Owls are the

most devoted bird couples. Now a Wood Owl comes nearly every evening and calls to its forlorn mate, and I think it must be the lost Owl, so have had the aviary temporarily divided by wire netting, and the door left open, hoping to entice it in. They were perfectly happy in their home, and were able to take long flights and go high up into the yews, and all the Owls in the neighbourhood came to visit them.

Frequently, in winter, the hootings have sounded all over the garden, among them the Barn Owls' screech and mew, and a whistle which I have attributed to one of the Little Owls.

Owls have a keen sense of fun, like a dog and cat, and one I had from its nest once used to play a sort of hide-and-seek with us, running away (when its legs looked as if cased in thick white stockings), looking round to see if we were coming, and darting to hide behind a tree or in the box, and peeping out warily.

I have alluded to my Owl as "It," as I have no idea of the sexes, for they are as alike as two peas, and their notes seem to be the same.

BREEDING OF THE INDIAN WHITE-EYE.

Zosterops palpebrosa.

BY WESLEY T. PAGE, F.Z.S.

Having been told that an account of the breeding of the Indian White-eye will be of interest to my fellow members I have much pleasure in inditing the following details.

I had long desired to possess this species, and in February of last year, our esteemed member Capt. Perrean wrote that he was sending me four pairs of this species and some other rare Indian softbills. After a period of eager anticipation, just before Easter (1911), I had the satisfaction of realisation, sadly curtailed alas! for only two of the birds shipped for me landed alive, and these were two *Z. palpebrosa*—the bulk of the consignment perishing in a severe blizzard which raged while they were passing through the Bay of Biscay and to the mouth of the Thames.

From their travelling cage they went straight into the outdoor aviary, and, although they had to endure frost on several

occasions, they settled down at once, and were quite at home in a few hours. They are fascinating little creatures in a large flight; their demeanour and general characteristics being similar to those of the English Gold-crest. They are out of doors to-day (Dec. 6th), and there were seven degrees of frost on the grass this morning, and they were certainly the happiest inhabitants of the aviary.

As regards diet, they take a little of everything that is in the aviary, including seed; but their main diet is milk-sop, ripe fruit, small insect prey and occasional mealworms. They are on the forage from sunrise to sunset, and now the leaves have fallen, they make a fascinating picture as they run up and down—creeper-wise—the bark of elder and hazel bushes (stems two to five inches in diameter) searching for prey. During last summer they delighted in a spar with Willow Wrens and Chiff-chaffs through the netting of the aviary.

They had been with me some weeks before I was able to determine that they were a true pair; then I caught them carrying bents into the elder tree, but could trace no signs of the beginning of a nest. I only got occasional glimpses of them at this period, the cover being very dense. On June 27th last, I noticed one of them fly out from the top of a hawthorn bush, and a dangling thread of hay led to investigation, and I then found a cradle-like nest slung on the underside of the branch, containing a clutch of three pale bluish-white eggs. Considerable skill was displayed in the choice of a nesting-site, as owing to leaves above the nest, it was sheltered from rain and sun—not even after a heavy thunderstorm have I found the nest wet. The birds—for both shared the duties of incubation—sat very closely and did not leave their eggs unless one approached within a foot of their domicile and did not return till the intruder withdrew.

The nest was somewhat like its builders, apparently fragile, but really strong, and when the young had flown it was as clean and perfect as when first discovered, save that the edges had been a little trodden down by the parent birds while feeding their young. The nest, a suspended pocket or cradle, barely two-and-a-half inches in diameter by two inches deep, was typical in all but material, and being constructed of hay, lined internally

with hay and a few feathers, was more bulky, ragged and clumsy looking than the nest of the bird at liberty, but the difference was only in material.

My data are somewhat doubtful, owing to the birds having begun to incubate before the nest was discovered, but I think it may be safely assumed that incubation had but just commenced. The facts are :—

Nest containing three eggs, discovered on the evening of June 27th.

Three chicks hatched early morning of July 7th.

Three fully-fledged birds left nest evening of July 17th.

Young birds fending for themselves August 1st.

It would appear that in this country the incubation period is ten to eleven days; that the young leave the nest when about eleven days old, and are competent to fend for themselves when about twenty-six days old.

The newly-hatched fledglings were pinkish flesh colour, quite naked and very minute. For the first four days they were fed entirely on blight, flies and other small winged insects, for which the parent birds foraged from sunrise to sunset: on the fifth day they commenced to feed with small mealworms. About every two hours I went into the aviary and saw that each parent secured three, which were first killed and then taken to their babies. On the morning of the tenth day they began to carry fruit (banana and orange) to their chicks, but still fed with as much live food as they could capture or I cared to supply.

The eyes of the chicks were open on the morning of the fifth day.

The parent birds carried the *fæces* of the young several times round the aviary, dropping it only when their movements were obscured by the foliage.

I had a look at the fledglings twice daily, and even with this regularity there was a noticeable increase in size at each visit. Paying one of these visits at 7 p.m. on July 17th I found the nest empty, though at 6.30 I had seen the three gaping beaks stretched above the top of the nest and all three calling for food. I could not trace them anywhere, and rather anxiously wondered what had happened, but early next morning all doubt was dis-

pelled, and three, apparently robust, young Indian Zosterops were disporting themselves for the first time in an English aviary.

In plumage, the young birds resemble their parents, but are slightly greyer, and they did not wear spectacles till the twenty-fourth day.

They are about the same size as the Gold-crested Wren. The Mus. Cat. states 4.2 inches, this is evidently a skin measurement (these often get stretched), certainly the living bird does not appear more than $3\frac{1}{2}$ inches from beak to tip of tail.

I can discover no outward distinction in the sexes, save that the male is a little bolder and a little more snaky about the head and neck. Above, bright golden-olive-yellow, brighter on the chin and throat, wings and tail-feathers brown with greenish-yellow margins; abdomen and flanks whitish-buffish-grey; a narrow circle of pure white feathers surrounds the eyes; bill blackish, bluish at base; legs plumbeous.

Their distribution is every portion of India, from Murree in the Hazara country to Sadiya in Assam, and southwards on the one hand to Ceylon and the Nicobars, and on the other to Bhàmo in Upper Burma. In the Himalayas the species is found up to 7000 ft., and it occurs on the higher hill ranges of Southern India (Oates).

In a state of nature it breeds according to locality, from January to September, but April appears to be the month in which most nests may everywhere be found. The nest is a very delicate little cup made of vegetable fibres and cobwebs, suspended in a fork of a small branch at all heights from the ground.

As regards aviary accommodation, these birds enjoyed a naturally planted flight, 29ft. \times 24ft. \times 12ft. high, with a cosy shelter attached, which they shared with the following species: Pairs of Streaked Laughing Thrushes; Grey-headed Ouzels; Snow Buntings; Blue, Archbishop and Black Tanagers; Paradise Whydahs, Jaccarini, Grey, Guttural, Zebra and Ribbon Finches; Long-tailed Grassfinches; Orange-cheek, Grey and Golden-breasted Waxbills; Silky Cowbirds; Green Singing Finches, with odd specimens of Doves, Maroon Tanager, Rufous-throated Sugar-birds, Cape Canary, Arkansas Siskin (*C. tristis*), a pair of Californian Quails and a few others.

THE MEXICAN GROUND THRUSH.

Geocichla pinicola.

By HUBERT D. ASTLEY, F.Z.S., M.B.O.U.

I have received a true pair of this *Geocichla*, which I think must be almost the first to be imported. This Thrush has never been in the collection of the London Zoological Gardens. It is an inhabitant of the pine-woods in the highlands of Mexico, where Mr. Richardson found it nesting at a height of 8,000 feet. It is also called *Ridgwayia pinicola* and *Turdus pæcilopterus*.

This bird is about the same size as the better known Orange-headed Ground Thrush (*G. citrina*), but is quite different in colouring. The male is dark umber-brown above, the feathers on the head and upper back having paler brown centres. The throat and breast are also dark blackish brown, the underparts ashy white, to white. The wings are pied with white and pale ash-brown, with geocichline markings, and the tail is tipped with the same colour. The final feathers of the upper tail-coverts are also white, giving the bird a decidedly pied appearance. Bill, dark grey; legs and feet, pinkish.

The female has the same pied markings, but where the male is deep umber-brown, she is altogether lighter and more spotted, so that the sexes are quite unmistakable.

Very little seems, according to Seebohm (Monograph of the *Turdidæ*) to be known of this Thrush. My birds are at present in a cage, and are quiet and inclined to be tame. Coming, as they do, from the high pine forests of Mexico, they have probably as a species not been frightened by mankind. The family to which they belong is an interesting one, and in many cases are good songsters. My Pine Thrushes have a very melodious call note, resembling a railway guard's whistle, blown softly; the sound falling at the end.

Some lovely *Geocichlæ* are found in Sumatra, Borneo, etc., with a bold mixture of bright chestnut, black, and white. They are by no means altogether Ground Thrushes, although they are fond of hopping about under bushes and shrubs, but my Orange-headed Ground Thrushes perch quite as much as any other species of Thrush, and when they nested and successfully reared a young one during the summer of 1911, they chose the very highest spot they could find in the aviary in which to build.

BRITISH AND FOREIGN BIRDS AT EDINBURGH.

By H. GOODCHILD.

Those few of our members who visited the tenth annual exhibition of the Scottish National Cage Bird Society, held in the Corn Exchange, Grassmarket, Edinburgh, on Dec. 30th and Jan. 1st, were rewarded, as usual, by seeing various out-of-the-way species of birds, not always on view either at a show of cage-birds or at the "Zoo."

The British section numbered 386 entries all told, while the Foreign section had 93, of which, however, 39 were of continental Goldfinches and Bullfinches.

Apart from the commonly kept Finches and Buntings, there were not quite a hundred British birds which would interest our members, but amongst them were some species which I never remember seeing alive, either in a state of nature or in confinement, and which were for the most part in a condition that would be worthy of wild birds.

The foremost place may be given to the female specimen of the Dartford Warbler, shown by Messrs. Martin and Archer; surely the first time a Dartford Warbler had ever been seen alive in Scotland. The bird seemed to feel the cold, although the weather was very mild, for the hall was not artificially heated at all, and at one time I thought this bird would have had to be removed from the exhibition altogether. Along with it were exhibited hens of the Bearded Tit, Grey Wagtail, Song Thrush, Missel Thrush and Waxwing.

A remarkable bird was a lutino "Yellow-hammer" of a pure yellow, as clear as a domestic canary; half-a-dozen others, albino or semi-albino, were shown with it.

This year, the class for British Buntings contained but one Meadow Bunting (Mr. A. W. Watson's), although I had once seen four or five here, there was a Black-headed Bunting (the continental *Emberiza melanocephala*) and two Ortolans, very sleek but not very bright in colour: also Reed, Corn and Snow Buntings.

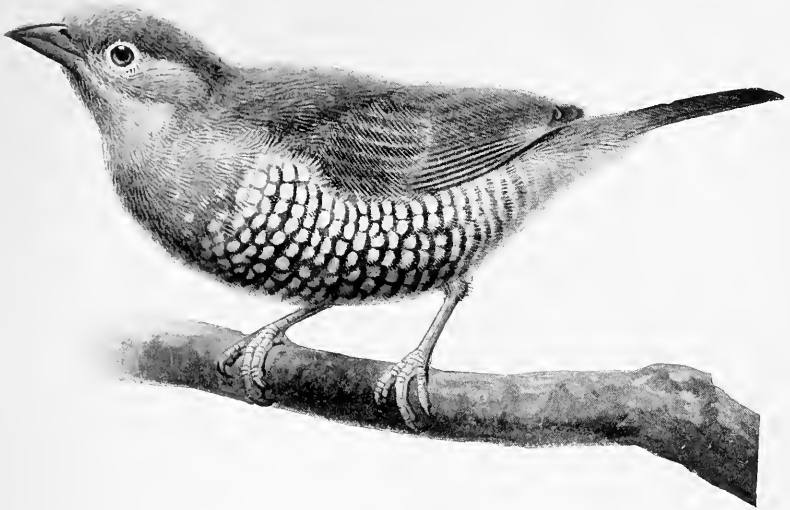
The smaller insectivorous birds included a very beautiful specimen of a Black Redstart, shown by Mr. Edmund Taylor, of

Glasgow, who exhibited also a Common Redstart with it. A charming specimen of the Tree Creeper, installed in a cage lined with dark blue plush!! interested others besides ornithologists. A choice specimen of a Yellow Wagtail, other Redstarts, two male Bearded Tits and a Sedge Warbler—the only Warbler in the class—accompanied it.

One Shore Lark only was here, and that one was sent from London! The remaining British birds of interest were Choughs, Hawfinches, Crossbills, Waxwings, and a solitary male Ring Ouzel.

It was in the Foreign section, however, that most of the interesting and beautiful birds were found; and although, apart from the Russian or Siberian Goldfinches and Bullfinches, there were only fifty-four entries, these included some rare species.

Foremost amongst them was the Himalayan Blue Whistling Thrush (*Myiophonus temmincki*), also called Temminck's Whistling Thrush, exhibited by our member Miss E. G. R. Peddie Waddell; a species that I do not think has ever appeared at a bird-show before. This particular bird was unfortunately rather ill at ease in a show-cage, having been used to a much larger aviary at home. An article on this species, by Mr. Astley, appeared in the *Avicultural Magazine* for April, 1903, p. 196, with a black-and-white plate of the bird, from a water-colour drawing by the author, depicting it in a characteristic pose. Readers who wish to see a description of the plumage, and an account of the habits of this fine species are referred to Mr. Astley's article. The first prize in this class went to a very sleek and silvery specimen of the White-eyebrowed Wood Swallow (*Artamus superciliosus*), from Australia, shown by Mr. J. M. Walsh, to whom belongs the credit of showing some of the choicest of the smaller birds in the show. He also showed a pair of Black-headed Sibilas in fine condition. Miss Peddie Waddell also showed a Blue-cheeked Barbet, but this bird was more nervous than the Whistling Thrush, and I did not attempt to draw it for that reason, and also a Greater Hill Mynah, one of the individuals lately at the Zoo. Two Green Glossy Starlings, one of them exceptionally glossy and beautiful, and a Green-billed Toucan, completed the class.



THE MELBA FINCH (*Pytelia melba*).



H. Goodchild del.

West, Newman proc.

THE WHITE EYEBROWED WOOD SWALLOW
(*Artamus superciliosus*).

In the class for Parrakeets, the first prize was awarded to a bird described in the catalogue as an "Adelaide," which it certainly was not. The species it most resembled was the Tasmanian or Yellow-bellied Parrakeet (*Platycercus flaviventris*) ("Parrakeets," p. 164), but it differed from that in having a subdued yellow collar and having broken red on the breast. I set it down at the first glance as a hybrid, and have no doubt in my own mind that it was a cross between a Barnard's Parrakeet and a Rosella. This bird was placed in front of Miss Peddie Waddell's beautiful pair of Black-tailed or Rock Peplar Parrakeets (*Polytelis melanura*), the male of which had an outer tail-feather rather out of place and chafed, at the time of judging. This pair of birds was otherwise perfect and in very sleek condition—the best specimens of the species I ever saw. Miss Peddie Waddell also showed a Malaccan Parrakeet (*Palaornis longicauda*) a male in perfect condition and very tame. Other birds in the class were Pennants, Blood-rumps, King Parrakeet, Black-cheeked and Peach-faced Love-birds and a Blue Mountain Lorikeet.

The class for the short-tailed Parrots only contained three birds. The first, a Ceram or Red Lory, a very good bird; a Senegal Parrot and a Blue-fronted Amazon.

The Waxbill, etc. class, was, as usual, remarkable rather for the pink of condition in which the birds were, than for any rarity of the species. The first prize going to a pair of the charming Orange-breasted or Golden-breasted Waxbills. The other seed-eating birds included the Melba Finch (the brightness of whose colouring cannot be indicated in a black-and-white drawing), a Green Cardinal (which seemed to me to be colour-fed), Cnban and Bicheno Finches, Crimson Finch, "*ruficauda*" Finches (*Bathilda*) and a Paradise Whydah—a very good bird, well staged.

Amongst the Tanagers, etc., the gems of the class were a Yellow-winged Sugar-bird; while an exquisite Black-throated Tanager, a Maroon, and a Tricolor were exhibited by Mr. J. M. Walsh. One of the most interesting was Miss Peddie Waddell's Blue-winged Fruitsucker.

My own thanks are due to the courteous officials of the show—Mr. Craig, the Manager, Mr. Watson, the Secretary, and

their lieutenants—for the facilities they gave me; and the thanks of all the exhibitors of foreign birds are due to Miss Peddie Waddell for her constant care in looking after the exhibits in this section, while they were in the keeping of the Scottish National Cage Bird Society.

CORRESPONDENCE, NOTES, ETC.

MANDARIN DUCKS AT LIBERTY.

SIR,—This last summer, as we had many Mandarin Ducks, we did not take the eggs but left them to the old birds to rear. The nests were as usual in holes in trees; many of them a long way from home and high up in most inaccessible places. All the young got down, or rather got themselves down, and what I want to draw your attention to is the extraordinary activity of these little ducks when first hatched.

To begin with, some of these nests were at least two feet down a perpendicular hole in a tree; the young to have got out must have jumped up that height. A brood of young ducks covered a mile as the crow flies, partly through standing corn, the day they were hatched, in little over an hour! The young ones were able to leap from the *water* on to a branch eighteen inches high when a day or two old, and it was very pretty to see an old duck fly on to a branch and the young leap up one after the other and range themselves along the branch; one or two would generally jump on to the old duck's back. The old ducks did not spend all their time with their broods, but flew away for hours at a time. When returning, they flew low through the trees with great rapidity, dodging in and out amongst the branches like a Woodcock, and calling loudly all the time; the young would hear her coming and swim out from where she had left them, and look about to see where she was coming from.

The pair of Pintailed Sandgrouse that I reported as nesting early in the summer, hatched and reared three young—two ♂, one ♀,—all of which are flourishing. The cock parent was hatched here fourteen years ago next June.

E. G. B. MEADE-WALDO.

NESTING OF HOODED PARRAKEETS.

Psephotus cucullatus.

SIR,—In November, 1911, my pair of this lovely variety of Golden-shouldered Parrakeets nested in a bird-room, the hen laying three eggs and sitting well, but they did not hatch, and I removed them from the hollow log. In December she laid another clutch of three, and again incubated them steadily, in spite of which they refused to be hatched, and after she

had sat over three weeks, in fact nearly four. I examined the eggs and found one egg clear, and nearly fully-formed young in the other two, but decomposed.

HUBERT D. ASTLEY.

A SUGGESTION.

SIR,—The description, in our January number, of a Roccio in Italy, and of the diabolical wholesale “murder of the innocents,” and the barbarous cruelties inflicted on the wee feathered pilgrims, must make the hearts of all bird-lovers ache with grief, and their blood boil with fury and disgust, as it does mine.

Can nothing be done by us to help to stop, for good and all, such hideous barbarity, such cold-blooded destruction of beautiful life? Could we, members of the Avicultural Society, each one of us, sign our names to a petition and send it up to the King of Italy? What is the Society for the Prevention of Cruelty to Animals in Italy doing, or rather *not* doing, to allow such things. The Society, backed by Queen Margherita, has done good work in Italy among the animals, why should the birds be neglected? Such things are impossible to understand.

I have been living now for over two years in Switzerland, and the absence of bird-life in this country, especially round about the Rhone Valley is sadly noticeable, and I think Italy must be greatly to blame for this. We must also blame the Swiss, for it is only just lately they have discovered that by eating the small birds their vines are so terribly visited by insect pests that in some districts they have had to uproot them wholesale and sell the land for building purposes. *Now*, there is a law against destroying the small birds, and the people would be only too glad to see them increase in Switzerland.

There is the hateful gun here, too, and if something is not done to prevent it, the big brown Eagle will be a thing of the past in the Canton of Valais, where it is shot whenever it can be got at.

My fellow-members, could we all sign a petition such as I have mentioned? Would it be possible for Professor Giacinto Martorelli, head of the Turati Collection in the Natural History Museum at Milan, who, as Mr. Astley tells us, is doing such splendid work in that way, to write it for us, and send it up to the King and Queen Elena, who, I believe, has a very kind heart. Will somebody second my proposal?

ALICE HUTCHINSON.

[We print with pleasure Miss Hutchinson's letter, but we feel that for the Society to take any active part in attempting to suppress the bird destruction in Italy would be beyond its legitimate scope. At the same time we shall be pleased to forward to Professor Martorelli any opinions members may care to send in. The knowledge that this destruction has attracted the attention of bird-lovers abroad may strengthen his hands.

—ED.]

BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

The arrivals at the Gardens since my last notes were written for the December number have not been numerous or of great importance, and very few birds that are new to the collection have been received. Perhaps the most beautiful is a Rainbow Bunting* (*Cyanospiza leclancheri*), a lovely species from Mexico, with sky-blue back and canary yellow underside. Those who have visited the bird shows during the last two years will be familiar with it, because a specimen belonging to Mrs. Tinniswood Miller, probably the first ever brought to England, has been shown several times.

The series of Hornbills has been enriched by a fine specimen of the Indian Concave-casqued form (*Dichoceros bicornis*), one of the largest of the group. It has been placed for the winter in the Small Bird House where it can be seen to much better advantage than in the Eastern Aviary, where the Hornbills are generally kept, but where the temperature is too low at this time of year for new arrivals.

By exchange with the New York Zoological Society, we received three species that are new to the Gardens, namely, a pair of Cuban Banded Woodpeckers (*Nesocoeleus fernandinæ*), a single example of the Cuban Green Woodpecker (*Xiphidiopicus percussus*), and a pair of Black-throated Crested Quails (*Eupsy-chortyx nigrogularis*) from Central America.

From South Africa we have received six examples of a species of *Zosterops*, which is new to the Society's list, namely, *Z. virens*, the Cape Green White-eye; as well as a single example of the South African Red-winged Starling (*Amydrus morio*) also new, and a Cape Robin-Chat (*Cossypha caffra*). The last is a singularly beautiful bird, olive-brown above with rufous tail and throat, black cheeks and conspicuous white eye-stripe. It is the second example the Society has possessed, the first having been presented by Major Horsbrough some few years ago.

Another recent arrival is a young Cassowary, but it is impossible at present to determine the species, as we do not

know exactly from what locality it came, and it will not exhibit its specific characters until later. However, any species of Cassowary is well worth having, and there is always the possibility of its proving to belong to a rare form.

THE SOCIETY'S MEDAL.

A medal has been awarded to Mr. Cosgrave for breeding the Laughing Kingfisher (*Dacelo gigas*), Ser. III., Vol. 3, p. 88.

Mr. W. T. Page is apparently entitled to a medal for breeding the Indian White-eye (*Zosterops palpebrosa*), an account of which appears in this number.

Will any Member, who knows of a previous instance of this species having been bred, kindly communicate with the Hon. Sec.?

PRACTICAL BIRD-KEEPING.

XII.—THE CROW TRIBE.

By E. G. B. MEADE-WALDO.

Members of the Crow family have been for ages, and still are, favourite pets in this country. Their vivacity, power of mimicry, and the comparative ease with which they are kept, recommending them to many who do not care for birds in general. They have the reputation of being very long-lived, and in many cases this is correct, but I do not consider that they are suitable cage-birds as a rule. All are birds of high intelligence, extremely active, and many of them are hardly ever quiet. They are best suited to roomy aviaries or semi-liberty. Under these conditions they thrive for years, and do not seem to mind confinement in the least, as they make friends with man, and amuse themselves in a variety of ways. All seem to pair for life, and are devoted couples.

The power of mimicry is by no means confined to tame individuals; both wild Jays and Magpies may be heard amusing

themselves by imitating various local cries. In many places I have heard our common Jay hooting and calling exactly like the Brown Owl, whose cry has evidently, and probably with reason, impressed itself very much.

In one of our woods the favourite song of the Jays in spring (for it is in spring that all these strange cries are mostly uttered) is the call of the male common Sheldrake. No Sheldrakes have been kept there for at least ten years. Yet the cry has not been forgotten, and has probably been handed down to the young from year to year, but I do not recollect to have heard that cry except in that particular wood.

The Crow tribe are practically omnivorous, and will not thrive on any one food; unfortunately for them they are more carnivorous in spring and early summer. The Raven appears to be the most carnivorous, but even he must have abundant variety in his diet. None of them are birds that have a feed and fill themselves; all are birds that are feeding on and off the whole day. Food is buried and dug up again, hidden in trees, covered over with clods of earth, but I don't believe that any hoard is ever forgotten. I can imagine no worse way of feeding these birds than one which is commonly adopted, viz., to give a lump of raw flesh! If flesh is given it should be either in the form of a bird or mouse, or a skull or bone, or in some cases, such as the Cissas, tropical Jays, etc., finely chopped meat mixed with other food, mealworms, etc. Eggs, so popular in a wild state, do not seem to be much relished in captivity, at any rate by some species, and I have given Starlings, Blackbirds and Thrushes eggs, day after day, to Choughs, Azure-winged Magpies (*Cyanopica looki*), Siberian Jays, etc., and they took little notice of them.

All the Crow tribe are very great bathers, and must be most liberally supplied with fresh water. With plenty of exercise and occupation they are hardy, but naturally require a good thoroughly sheltered house to retire into at night.

Although many species have some raucous unpleasant cries, all have some charming modulated notes. The Raven will warble like a Blackbird, and also ventriloquise, so will the

Carrion Crow. The Siberian Jay* (*Perisoreus infaustus*) of which I wrote an account in the early days of the magazine, has many most musical cries. I do not recollect to have seen one of these charming birds in captivity since we had our pair, which lived for many years; these would eat mice and mealworms, but were also great consumers of currants, sultanas, etc. All the true Jays are very fond of acorns. I believe no true Jay is found where there is no oak.

In conclusion, I would urge that those who keep any of these birds, should confine them in roomy aviaries or keep them in semi-confinement. Remember that they like to be taken much notice of, are great bathers, are omnivorous, and they are not as a rule suitable companions for other birds. I think an exception may be made of the Choughs, but even they are best kept by themselves.

I do not think many of these birds have bred in confinement. Most of them are very shy at the breeding time. The Raven of course has bred at Lilford and repeatedly at Scampston. The Chinese Blue Magpie has bred in the Zoological Gardens and the Spanish Blue Magpie at Lilford, and the latter built most beautiful nests and laid clutches of *clear* eggs, on which they sat diligently year after year in our aviaries.

RETIREMENT OF MR. ARTHUR GILL.

We regret to announce that Mr. Arthur Gill, M.R.C.V.S., who has for many years done the *post-mortem* examinations of birds for members of the Avicultural Society, is leaving England for Canada in April, and is compelled to resign that duty. He has, however, kindly consented to carry on the work until the end of March, and members who may wish to avail themselves of his help are requested to note that his address till that date will be:—

“The Nurseries,”

Bath Road,

Langley, Bucks.

We should like to thank Mr. Gill for his past services to

the Society, and to assure him that he carries all good wishes with him to Canada. Members will be glad to learn that he wishes later on to contribute from time to time to our Magazine some notes upon Canadian birds.

In the March issue of the Magazine the Council hopes to be able to announce the name and address of Mr. Gill's successor.

R. I. Pocock,
(*Hon. Business Secretary.*)

COUNCIL MEETING.

The half-yearly Council Meeting will be held at the Zoological Society's Offices on Monday, Feb. 5th, at 3 p.m.

R. I. Pocock,
(*Hon. Business Secretary.*)

NOTICES TO MEMBERS—(Continued from page ii. of cover).

NEW MEMBERS.

Mr. DUDLEY LE SOUFF, Zoological Gardens, Royal Park, Parkville,
Melbourne.

Mr. ALFRED EZRA, 110, Mount Street, W.

CANDIDATES FOR ELECTION.

Mr. E. HUBERT FOSTER, Lower Bowden, Pangbourne, Berks.

Proposed by Mr. D. SETH-SMITH.

Mrs. F. E. COX, 3a, Bickenhall Mansions, London, W.

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The Committee beg to acknowledge, with many thanks, the following donations to the Illustration Fund.

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Mrs. Katharine Curry	3	3	6

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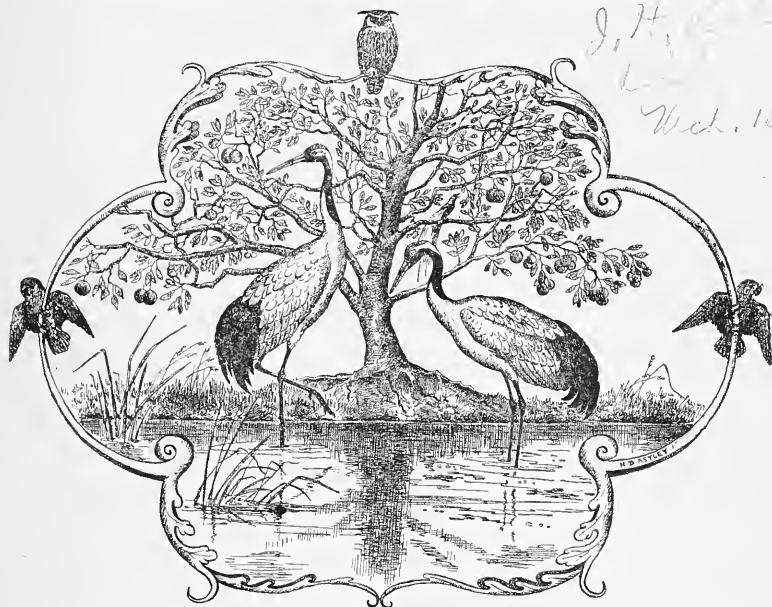
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Edited by J LEWIS BONHOTE, M.A., F.L.S.



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*All MSS. for publication in the Magazine, Books for Review, and Private Advertisements* should be addressed to the Editor, Mr. J. LEWIS BONHOTE; Gadespring Lodge, Hemel Hempstead, Herts.

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*All other correspondence*, should be sent to the Honorary Business Secretary, Mr. R. I. POCCOCK; Zoological Society's Gardens, Regent's Park, London, N.W. Any change of address should at once be notified to him.

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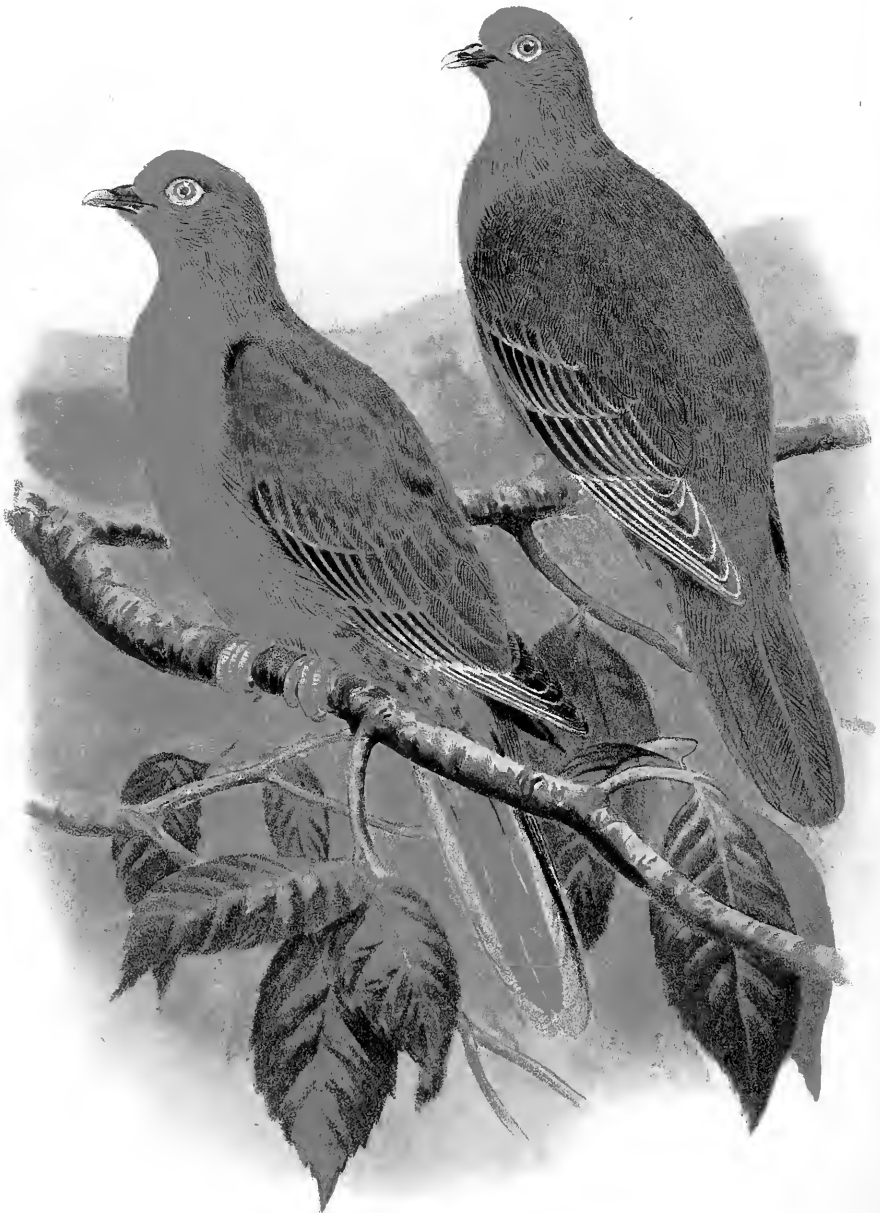
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WEDGETAILED GREEN PIGEON.  
*Sphenocercus sphenurus.*



# Avicultural Magazine,

BEING THE JOURNAL OF THE  
AVICULTURAL SOCIETY.

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MARCH, 1912.

## NOTES ON SOME HABITS OF THE KOKLA OR WEDGE-TAILED GREEN PIGEON *Sphenocercus sphenurus*, (VIGORS), IN CONFINEMENT.

By PELHAM T. L. DODSWORTH, F.Z.S., M.B.O.U.,  
*Member of the Bombay Natural History Society.*

In an interesting article entitled "Green Pigeons" (*Crocopus phoenicopterus* and *Crocopus chlorogaster*), contributed to the columns of the *Madras Mail*, dated the 30th June, 1911, Mr. D. Dewar makes, among others, the following remarks:—

- (a) "The natives, or at any rate some of them, assert that the bird never descends to the ground, because when its foot touches the earth, the bird loses a pound in weight, in other words, shrivels up into nothingness. If asked how it drinks, they will reply that it settles on a reed which bends with its weight, so that it is able to partake of the water beneath without touching the earth. In the absence of a conveniently situated reed, the Green Pigeon overcomes the difficulty by carrying a twig in its feet. It would be interesting to discover the origin of this story, etc."
- (b) "Green Pigeons are said to be far less obtrusive in their courtship than the majority of their kind. The male does not puff himself out after the manner of other cock pigeons, but is content to bow before his lady love, and in this attitude move his expanded tail up and down."

As a little light can sometimes be thrown on doubtful and

obscure points in regard to the habits of wild birds by observing the behaviour of their brethren in captivity, the following particulars about a pair of Kokla Green Pigeons (*Sphenocercus sphenurus*)—a very closely allied species to the birds mentioned in Mr. Dewar's article—which were taken from a nest when quite young, and reared by hand, may, perhaps, be of some interest to readers of this Magazine.

Before entering into details, I will preface my notes with a few general remarks on the habits, distribution, etc., of this species. The Kokla or Wedge-tailed Green Pigeon is a common summer visitant to the North-West Himalayas, south of the first snowy ranges, arriving from Nepal and farther eastwards about the last week in April, or the beginning of May, to breed, and then returning to their old haunts about September, or as autumn sets in. During their summer sojourn in these mountains, they are generally to be found along the outer ranges, at elevations of 4,000—7,000 feet, but are most common at about 5,000 feet. They principally affect well-wooded and shady dales, hill-sides, valleys, and glens, and are not so gregarious as the Green Pigeons mentioned by Mr. Dewar, which are to be found in large flocks, sometimes numbering as many as thirty to forty individuals, and even more. Our birds are to be seen either singly or in pairs, or in small parties of three or four. They are strictly arboreal, and are exclusively frugivorous. They are very partial to the ripe berries of the *Kaiphul* (*Myrica sapinda*). "When hunting for fruit, they are continually gliding about the branches, like squirrels; and, from their strong feet, they can hang over to seize a fruit, and recover their position at once by the strong muscles of their legs. When perfectly quiet they are very difficult to observe, from the similarity of their tints to that of leaves." They are heavy feeders, and generally seek their meals early in the mornings and late in the afternoons. To avoid the heat, they retire during the middle of the day to some shady trees, where, hidden amongst the foliage, they sit motionless, and spend the time dozing; occasionally one wakes up and utters its soft, plaintive whistle, and it is by these alone that the birds betray their presence. Their flight is rapid and strong. In their nesting habits they are more or less similar to those of the other Green Pigeons found in

various parts of India. They are of course monogamous, and lay the usual two white eggs of the Dove-type, on nests which are clumsy structures of a few dry twigs loosely put together, without any lining, and which are placed either in bushes, or on trees at various heights from the ground. Some other details in connection with their nidification which I have observed are: the period of incubation lasts from eighteen to nineteen days; the bird begins to brood after the first egg is laid, and both birds share in making the nest and hatching the eggs. Both birds also share in feeding the young. The latter leave the nest in about three-and-a-half weeks. The old birds are very close sitters, not only when the eggs are fresh, but also when the young are fully fledged. I remember on one occasion finding a nest, placed on the horizontal branch of a large oak about 40 feet high, in which the old bird was sitting very hard. Thinking that the nest contained either hard set eggs or very young ones, I decided to leave it alone and examine it a few days afterwards. During the course of the following week, I visited the nest again, and noticed the old bird sitting in it. On climbing up to the nest, my astonishment can be imagined when I saw the old bird fly off, followed by two young, fully fledged! Another curious feature about these birds is that, as their eggs and young suffer largely from the depredations of Jungle Crows (*Corvus macrorhynchus*), they sometimes show considerable intelligence in availing themselves, during the breeding season, of the protection afforded them by the more quarrelsome and powerful species. Now the *Dicruri* are notoriously pugnacious during the breeding season, never allowing Crows, Kites, *et hoc genus omne* ever to approach within their "spheres of influence," and it is, therefore, not at all unusual to find nests of the Kokla in close proximity to those of Drongos. The former belonging to the nests are always allowed free access and regress to the tree, but it is very different when a stranger shows himself in the vicinity. In one particular instance that I happened to witness it was an unfortunate Black-throated Jay (*Garrulus lanceolatus*), which unknowingly approached too close, and was handled so severely by the Drongos that it soon had to make itself scarce.

The male Kokla is by far the handsomer bird, and the

female looks quite dull compared with him. The prevailing colours are dull leaf-green and yellow-green or orange, with a sprinkling of ash and maroon above, but there is nothing gaudy in the plumage: each shade blends wonderfully with the others, and to really appreciate the bird, one must have it in the hand. In my opinion, the descriptions of the Kokla, which are given in the various text books on Indian Ornithology, convey only a faint impression of the bird's plumage, but I prefer Blanford's account to that of any other: "*Male*. Head, neck, and lower plumage yellowish green, tinged with rufous on the crown, and with orange and a wash of pink on the upper breast; upper back greyish, passing into maroon-red on the middle of the back and lesser wing-coverts; rump, upper tail-coverts, median and large wing-coverts, and exposed portion of tertiaries olive-green; primaries and secondaries blackish, both they and the greater wing-coverts narrowly bordered outside with yellow; upper surface of tail olive green like rump, the outer feathers more and more grey, lower surface of wings and tail dark grey; lower flanks and thigh-coverts dark green with pale yellow edges; lower tail-coverts varying from pale cinnamon to buff. The *female* lacks the orange on the crown and breast, and the maroon on the back and wings, the latter parts being dark green like the rump; under tail-coverts dark green with broad buff borders."

The bill is dull smalt-blue, the horny portion pale blue; the orbital skin pale smalt; the irides with an inner ring of pale bright blue, and an outer ring of buffy pink; the tarsi and feet are coral red; and the claws light-brown horny, darker at tips.

The following are the measurements of a large series of birds:—

|                |             |    |          |       |
|----------------|-------------|----|----------|-------|
| Length         | varies from | .. | 13" to   | 14"   |
| Expanse        | „ „         | .. | 19·8" to | 21·3" |
| Wing           | „ „         | .. | 6·5" to  | 7·5"  |
| Tail from vent | „ „         | .. | 5·25" to | 6"    |
| Bill from gape | „ „         | .. | .9" to   | 1·1"  |
| Tarsus         | „ „         | .. | .84" to  | .9"   |

Weight 7-8 ozs.

In this species the female is the slightly smaller bird.

The *Paharce* name for this bird is "Kainal," and the Hindi "Kokla" or "Kokila."

On the 1st July, 1910, one of my egg-hunters brought me a pair of these birds, about a fortnight or three weeks old, from a nest which he had found, in the neighbourhood of Simla (N.W. Himalayas), placed on one of the outer branches of a large oak, at an elevation of about 6,300 feet. The young Koklas were immediately taken in hand by my wife, and rearing operations commenced. On being handled at first they would slightly raise the wing, nearest to their supposed enemy. They were kept in a small wooden box, lined with some straw and grass, and were fed about five or six times a day, exclusively on small pieces of ripe plantains, which had to be thrust down into their mouths. A little water used occasionally to be poured down their throats after the last meal in the evenings. When they were almost fledged, they were transferred to a cage containing two Doves (*Turtur ferrago*), which had also been taken from a nest, and were being reared by the hand.

By about the end of September the Koklas appeared to be full grown; and their irides, which were hitherto brown or greyish-brown, now assumed the characteristic colouration of the adult bird, viz., a pale blue ring followed by an outer ring of red. As far as I can now recollect the birds had, up to this, uttered no note of any kind. As the migratory period of this species had now arrived, I was anxious to see whether my birds would exhibit those symptoms, which are usually displayed by roving birds when in confinement, but no such indications were observed. The Koklas were as dull and inactive as ever, and seemed quite reconciled to their home.

Towards the latter end of the following November, the cock began uttering his notes, but these were incomplete, or, in the language of bird-fanciers, he was only "recording." These "half" notes were generally uttered late in the evenings between seven and eight p.m.

During the winter the birds thrived excellently. Their diet still consisted of pieces of plantains, which they would accept *sitting on their perches*, and only from the hand of their mistress. If the fruit was placed in the cage it was never touched. They were fed about four or five times a day. They always drank water from a cup, which, like their food, had to be held up to

their mouths. When hungry, the birds always became very active, hopping about from perch to perch and peering anxiously at their mistress, if she happened to be standing near their cage. If no notice was taken of them, or she walked away from the cage without feeding them, they would settle down into their usual lethargic condition, but immediately renewed their activities on catching sight of her; the presence of strangers or of others in the house was entirely ignored by the birds.

I will now deal with the popular native beliefs mentioned by Mr. Dewar that Green Pigeons never descend to the ground, and that when they have occasion to drink, they either settle on a slender reed close to the water, or carry a twig in their feet. These stories are, to the best of my knowledge, prevalent throughout the whole of Upper India, and referring to them in his "Birds of Lucknow Civil Division," Geo. Reid remarks (S.F. Vol. X., p. 59): "Be all these 'yarns' as they may, it is a rare occurrence to see a Green Pigeon on the ground—still rarer to see it drinking." With reference to this, Hume appended the note: "But do they ever drink? I think not." Blanford adds, (Fauna, Birds of India, Vol. IV., p. 6) that he cannot recollect ever seeing these birds drink. Against these opinions we have that of Jerdon, who states emphatically (Birds of India, Vol. III. p. 449) that the birds (*Crocopus chlorogaster*) "come in large parties, generally about nine a.m., to *certain spots on river banks, to drink, and after taking a draught of water, occasionally walk a few steps on the damp sand*, appearing to pick up small pebbles, pieces of gravel or sand." The italics are mine. Now it is by no means easy to steer one's course amidst this formidable array of conflicting statements expressed by the leading Indian ornithologists. It is out of the question to suppose, even for a moment, that Jerdon could possibly have been mistaken, while, on the other hand, it seems extraordinary that, if Green Pigeons were habitual drinkers, the point should have escaped the observations of such acute ornithologists as Hume and Blanford. Whether the rest of the species of Green Pigeons also have *particular* spots where they descend to the ground to drink water, or whether the juice from the berries and fruit, which they feed on, suffices to quench their thirst, I know not, but certain it is that the pair of my

birds in confinement showed the *most intense aversion to descend from their perches, and would never do so if they could possibly help themselves*. Moreover, for years past, I have been closely observing the various species of Green Pigeons, and must have shot, at one time or another, some hundreds of them, for they are good table birds, but have never up to this seen a single one on the ground. And what is more, I have never yet seen one in the wild state drinking water. Natives are by no means poor observers, and I must confess that it seems to me, while rejecting most of their story, that there are good grounds for thinking that Green Pigeons are seldom seen on the ground, and the probabilities are that most of them live without drinking. That some species of birds *do* live and thrive without water there can be no possible doubt. Bartlett, in his "Wild Beasts in the Zoo," instances several such cases. All the known species of Parrots can be kept in captivity for years without water and "continue in the most robust health and beautiful feather condition." The little Parrakeets, which are exported from Australia in thousands, thrive without water and arrive at their destination in splendid condition "if kept on Canary seed only." Writing in 1881, Bartlett remarks: "At the present moment may be seen at the Parrot House of the Zoological Gardens, a Greater Vasa Parrakeet, presented by the late Mr. Charles Telfair, July 25th, 1830; therefore this bird has lived in the Society's possession 51 years without being supplied with water. It must be borne in mind that the food supplied to birds of this kind is pretty moist, etc." In conclusion, Bartlett adds that he once saw a large collection of Indian Quails in the *very* finest state of health, that had had no water since they left India, and the only food which had been supplied to the birds was dry millet seed.

Since writing these notes, I think it only right to mention that my friend, Mr. T. G. B. Waugh, has informed me that early one morning, while watching for deer in the Ambala Division, he saw a Green Pigeon, probably *Crocopus chlorogaster*, settle at a small stream, and drink water.

(To be continued).

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## BULLFINCHES.

By KATHARINE CURREY.

What bird-lover has not kept the charming little "bud"-finch as a pet. One of the most interesting of British wild birds, so full of character, wilful, impulsive, devotedly affectionate and fiercely jealous. And his sweet, soft song, a little plaintive—as so many sweet songs are—and yet cheery, as he flirts his tail from side to side, and bows and twists himself about while whistling the little airs.

I have kept the larger and smaller species; the former I brought from Austria, a beautiful bird, living, or rather existing, in a tiny cage hung against the house of a wood-cutter. He was regaling himself on privet-berries, of which bullies are inordinately fond. I have until now always found that the cock Bullfinch prefers single blessedness in confinement, as the hen truly deserves her name of "bully" and will not let him eat. A little pair I have now are very united, though the cock is old and has a poor little crushed foot. His mate seems to like him all the better for it, and, when he sits on the perch in evident discomfort with his foot, she flies to him with a tit-bit.

A striking instance of the attachment of even a wild bird not hand-reared to its cage-home happened some months ago.

Three years ago, a cock Bullfinch I had had for a few years escaped, and I consoled myself with the thought that as all the other bullies I had kept, that had accidentally flown out of their cages, had come back generally after a short time this one would follow their example. But this Bullfinch was attracted by some fruit in the garden, and flying to some distance lost his way home. It happened that he used to sing a peculiar little song with three airs in it and I used to whistle these to him and he answered. Although he replied to my call, however, he flew off further and further and never returned until last summer, when as I was in the garden, I heard a Bullfinch's note; I whistled, and he piped back—that unmistakable plaintive whistle of the bully! Nearer and nearer he came, and then I whistled the little song with the three airs. He answered, and flew straight to me and to his old cage on the lawn. It was my long-lost pet! But as he had had his freedom for so long I would not deprive him of it



as I thought he probably had a mate and little home somewhere near. He came every day and fed out of a little saucer of seed placed upon his old cage for him, and once he flew into the cage and sang as of old.

I have other Bullfinches in the cage now, and he has flown on to the wire roof, sung to the hen, and tried to get at the cock to do battle. Then he came with a mate, and I am hoping they may come back as winter draws on, but he has not been seen since November. He used to fly about at breakfast-time and eat crumbs off the table, singing and whistling. I fear he may have been shot or trapped, as it is not understood in this country how much good the Bullfinch does to a garden, even if he does help himself to a little fruit occasionally by way of reward.

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## THE PARSON BIRD.

By JOHN WILLIAM AINLEY.

This bird is credited with three distinct names, viz. : Poe Bird, Tui, and Parson Bird. It is a native of New Zealand, and in size about like that of our English Blackbird, measuring  $8\frac{1}{2}$  inches from tip of beak to end of tail, of which the tail comprises about  $2\frac{1}{2}$  inches. The Poe Bird is, broadly-speaking, black all over, with these exceptions, the primaries are of a metallic hue, while on either side of the throat is a little bunch of white feathers, which the bird at its option can draw together and thus form one single hanging tie, hence the name Parson Bird. From the base of the skull, right down the back of the neck falling well on to the shoulders, is a complete network of feathers curved as seen at the tip of an ostrich feather, only on a miniature scale.

I kept my Poe Bird in a cage a little over 4ft. long by 2ft. 6in. deep, and I think a cleaner insectivorous bird no one can possess, for the moment he saw his bath he was impatient to be in it. I do not ever remember seeing him feed on the cage bottom, as he invariably fed hanging head downwards from his perch. His song was different from that of any other bird that I have heard, and when commencing to sing one would have thought the bird was choking, yet still his song was sweet and

lasting, in fact he would sing till the tongue became swollen, when a little honey would soon right matters.

The Poe is a brush-tongued bird and easily catered for, if kept under proper conditions, the main things being plenty of room for exercise, cleanliness, regular bath and not over-feeding. Should the latter be abused by over stimulating foods the bird will have fits, which must be checked by sprinkling him with cold water, then giving him a dose of magnesia and reducing his food on to a plainer diet.

I kept my bird in constant song and in the best of plumage on the following diet: 8ozs. boiled bullock's liver grated, 8ozs. sponge cake, 4ozs. best ants' egg, 3ozs. flake egg and 2 ozs. honey. On alternate days I gave boiled potatoes mixed with a little flake egg, also fruit in abundance. I have seen it extract juice from an orange until the same was completely dried up, and yet never leave a trace that the orange had been tampered with. He was also fond of a few mealworms, but feed sparingly and you have in a Poe Bird one of the finest gems that an aviculturist need wish for, although it is a long while since I saw one on offer. It has never been my luck to possess a hen.

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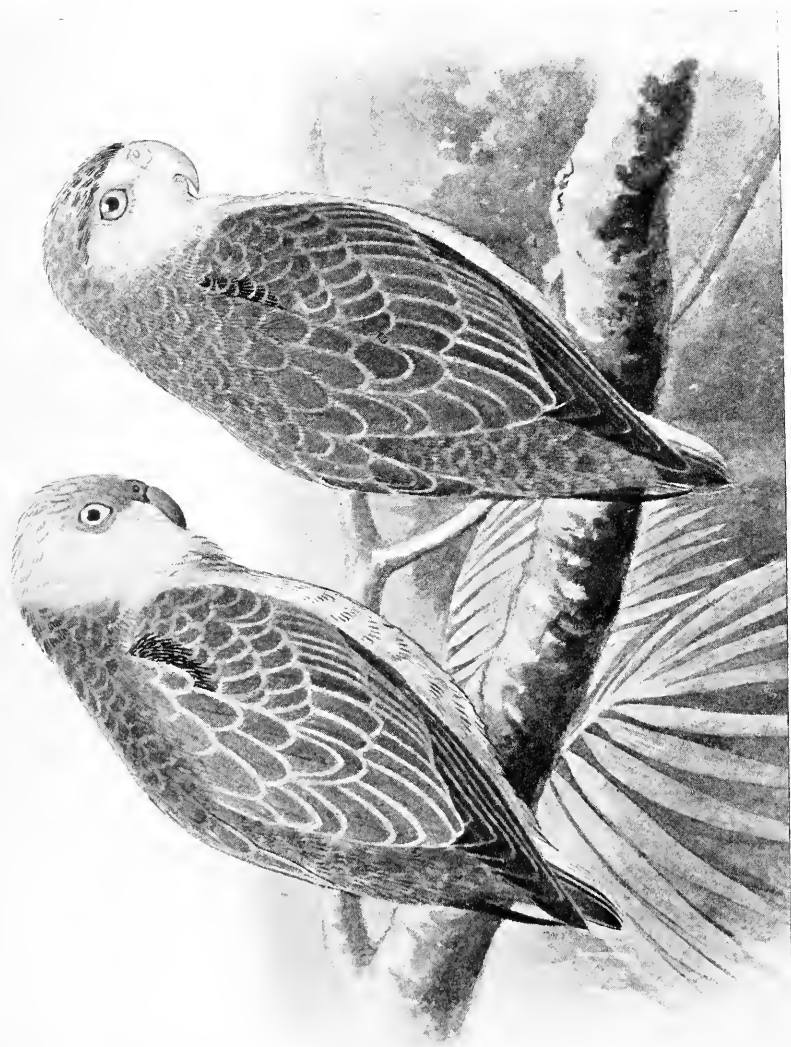
## FOREIGN BIRDS AT THE CRYSTAL PALACE SHOW.

By D. SETH-SMITH, F.Z.S.

The Annual Show of the London and Provincial Ornithological Society was held at the Crystal Palace from the 2nd to the 6th of February, dates which coincided, as it happened, with some of the coldest weather that we have experienced in the South of England for some years, and as I journeyed down to Sydenham on the first day of the Show, in an unwarmed railway carriage, I felt very thankful that I was not the owner of any birds at the show in such weather.

The authorities did their utmost to provide and maintain a suitable temperature for the more delicate birds, but I noticed that the exhibitors who had sent such delicate subjects as Sun-birds were careful to place their cages against the hot pipes. It is certainly the worst time of the year for a show of foreign birds, but since these have to join forces with Canaries and British





H. Goodchild del.

BLUE-RUMPED PARRAKEETS (*Psittinus incertus*).

West, Newman proc.

birds, and the Canaries at least are occupied with family cares or their change of costume during the warmer months of the year, there seems nothing for it but to hold bird shows during the winter months. But the fact that such shows are badly supported by foreign bird owners does not mean that foreign birds are unpopular, but that the owners value them too much to run the risk of losing them.

The foreign classes were very poorly filled, in fact numerically the show was about the poorest I remember, although considering the small number of entries the quality was good. The two Parrot classes were judged by Mr. H. T. Camps, the remainder of the foreigners by Mr. Frank Finn.

The class for PARRAKEETS, LORIES AND LORIKEETS contained ten entries, the first and third prizes going to a very fine Brown's Parrakeet and a nice but wild pair of Many Colours respectively, belonging to Mr. W. Edmunds; the second to a nice Pennant owned by Mr. Baxby, and the fourth to a curiously marked King Parrot in which the face was mostly yellow, owned by Mr. L. W. Hawkins. Besides the prize winners there was a very good pair of Brown's as well as another single bird, a nice Ceram Lory and a fine Red-collared Lorikeet which ought, in my opinion, to have been a prize-winner.

The class for OTHER PARROTS contained a pair of the very rare Malayan Blue-rumped Parrakeets (*Psittinus incertus*), probably the first ever exhibited at a bird show. They were quite young birds, in the same state of plumage as a pair, probably of the same importation, now on view in the Parrot House at the Zoo. They appear to be somewhat closely allied to the Lovebirds, and when adult the male has a greyish-blue head while that of his mate is brown. The owner, Mr. L. W. Hawkins, failed to secure more than a V.H.C. card for his rare exhibit. The first prize in the class went to a Meyer's Parrot belonging to the Rev. G. H. Raynor, who also obtained fourth for his very much rarer Everett's Parrot. The second prize went to a nice Black headed Caique sent by Mr. Hawkins, and the fourth to a very fine Yellow-naped Amazon belonging to Mrs. L. Thorpe.

Mr. F. Howe took the first prize in the class for the COMMONER WAXBILLS, GRASSFINCHES AND WEAVERS with a

beautiful pair of Golden-breasted Waxbills, while Miss Bousfield's Diamond Finches took second prize, the rest of this class being made up of St. Helena Waxbills and Ribbon Finches.

In the class for the RARER WAXBILLS, &c., the first prize went to Mr. F. Howe, for a very nice Melba Finch, Miss Bousfield taking second with a fine Red-headed Gouldian and Mr. Thwaites third with a pair of Pintail Nonpareils. Perhaps the rarest bird here was a Scaly-crowned Weaver, a rare bird, but not looking particularly bright.

Amongst the GROSBEAKS, TRUE FINCHES AND BUNTINGS was a nice cock Olive Finch which received first prize for its owner Miss Wait, a fine Black-headed Siskin belonging to Mr. Arrighi (second) and a pair of Blue Grosbeaks (third), two nice Green Cardinals and a Black and Yellow Grosbeak were also shown here.

The class for TANAGERS contained seven entries, all good birds. Mr. Townsend's Blue-winged or Gold and Green Tanager came first; a lovely Black-throated (*C. thoracica*) owned by Mr. Walsh, second; the same exhibitor's fine Maroon Tanager third, and Mr. Frostick's very rare Pretre's Tanager, fourth.

SUGAR-BIRDS, HONEY-EATERS, ZOSTEROPS, BULBULS AND SUN-BIRDS. This class contained ten exhibits, two of which, a Hardwick's Bulbul and a Rufous-throated Tanager, both in splendid condition, arrived too late for the judging, while two pairs of Amethyst-rumped Sunbirds were entered as "not for competition." The first prize went to a magnificent specimen of the Amethyst-rumped Sunbird belonging to Mr. A. Ezra, the same bird that was successfully shown at the Horticultural Hall Show in October; the second Mr. Townsend's small Black-legged Sugar-bird (*Dacnis nigripes*), perhaps the first imported, third to the same exhibitor's Banana Quilt, and fourth to a lovely Purple Sunbird shown by Mr. Frostick.

The last class for All Species not provided for elsewhere, generally known as the ANY OTHER VARIETY CLASS, contained eight entries. The greatest rarity was Mr. Ezra's Japanese Red-breast, an extremely rare exhibit; well deserving the first prize which it secured. A nice pair of Black-headed Sibias belonging to Mr. Walsh came second, while the same gentleman took third with a nice White-eyebrowed Wood-Swallow, the fourth going to Mr. Wade for a Shama.

## BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

Although very little of interest has arrived lately we have been kept very busy amongst the birds, in preparation for the coming breeding season, when I hope we may beat our record in the number of birds hatched and reared. The Zoo is anything but an ideal place for breeding birds. The aviaries are in a chronic state of overcrowding, the birds can never be kept properly quiet, and new birds are constantly arriving in the breeding season, which, for want of other accommodation, often have to be put in the same aviary with breeding birds, an arrangement that militates strongly against the chances of success.

Our greatest success during the last two years has been with Pheasants and Waterfowl, and this year we have a better collection, or rather a collection better established than in either of those years; but, unfortunately, we have very little rearing ground. This year our Pheasants will have to be reared in one of the new goose paddocks as they were last year, but then the ground had never before had birds on it, whereas now it is decidedly stale.

At this time of year the Waterfowl have to be carefully looked over and the pairs arranged so that those kinds which are likely to disagree may be placed on different ponds. All nest boxes have to be examined and lined with a fresh nest of turf and leaves. In the same way the Pheasantries have to be gone through and provided with faggots of brushwood, behind which the hens can lay, and the breeding pens selected and arranged so that no further shifting has to be done until the breeding season is well over.

The Great Aviary has been overhauled and a special arrangement of small mesh wire netting and curved zinc, fixed all round to render it as far as possible rat-proof. Ever since I have known this aviary it has been more or less over-run with rats, no attempt having been made to keep them out when it was re-wired some six or seven years ago. It will be a great thing for the birds if we can succeed in excluding these pests.

Since my last notes appeared the only arrival, new to the collection, has been a Yellow-rumped Hangnest (*Pseudoleistes*

*guirahuro*), a species inhabiting open country in Southern Brazil and Paraguay, and nesting in reed-beds. We now have an example of each of the two species of the genus *Pseudoleistes*,—*P. guirahuro* and *P. virescens*; both brownish green birds, the former with the rump and underparts yellow, the latter with the rump like the back and only the underparts yellow.

We have added to our stock of ducks eight pairs of the charming Baikal Teal (*Nettion formosum*), a species that some few years ago was quite rare in Europe, costing from five to ten pounds a pair, but which has recently been imported in vast numbers and sold at a remarkably low price. It is extremely wild at first, but soon settles down, and next to the Mandarin and Carolina, is one of the most showy of all the ornamental waterfowl.

The pair of Kolbe's Vultures went to nest soon after Christmas, laying a single egg which they took turns to incubate. They sat splendidly through the recent severe frost, but after the full period of six weeks had elapsed they were both noticed off the nest one day, and an examination revealed nothing but a few fragments of broken shell.

D. S-S.

## CORRESPONDENCE, NOTES, ETC.

### AGE OF ROBINS.

SIR,—I wonder if any of your readers could tell me the age to which a common Robin may be expected to live, assuming freedom from disease and accident.

I have had (if one can be said to have even a possessory title to a bird having absolute liberty) a tame cock Robin in my garden and house for 6½ years past, and he seems as well as ever. During this period he has regularly had two nests each spring and usually brought off four healthy young from each nest.

I will not detail wearisome trivialities as to his absolute tameness, but two points occur to me as possibly of general interest. (1) The one is that, considering the numbers of his offspring, the rate of mortality amongst Robins must be great, or the district would soon be overstocked, assuming other Robins are equally successful in nesting operations; (2) all sorts and conditions of men are intensely interested in a common-place tame bird such as a Robin, while rare birds, or birds with curious habits are often passed unnoticed.

C. BARNBY SMITH.



## A ROCCOLO IN ITALY.

It may interest members to know that Mr. Astley's article was considered at a Council Meeting of the R.S.P.B. on January 26th last with a view of seeing whether any steps could be taken to put a stop to these practices. As the question had already been considered by the International Committee for Bird Protection, it was decided to take no action pending the publication of their Report, J. L. B.

## THE DIPPER AS A CAGE BIRD.

SIR,—One of the most novel exhibits at the recent Bird Show at the Crystal Palace was a Dipper shown by Miss G. Fishburn. It appeared to be quite happy and contented and its condition left nothing to be desired. The food appeared to consist entirely of live gentles. D. SETH-SMITH.

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REVIEWS.

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BRITISH BIRDS NESTS.\*

For a long time there has been such a continuous stream of books dealing with our native birds that the appetite of the public for such literature must be well nigh insatiable. This new work, however, which is being issued in monthly parts, is of its kind one of the best we have seen. It is written presumably for the schoolboy whose chief interest is in the nidification of birds, and is copiously illustrated by photographs taken by the Brothers Kearton, whose name is a sufficient guarantee for their excellence.

The arrangement of the book is alphabetical and will, therefore, be much appreciated by the ordinary man in the street who has no time to learn or fathom the ever-changing whims of modern classifiers. Under each species we have the information arranged in headings—such as Description of Birds, Situation of Nest, Materials of Nest, Eggs, Time of Laying, etc., making a very concise but yet complete *vade-mecum* on the nesting of our British Birds.

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THE EMU.†

The January number of *The Emu* contains a report of the Annual Meeting of the R.A.O.U., and we are pleased to see the Union is in such a flourishing condition.

---

\* *British Birds Nests*, by RICHARD KEARTON. Part I. 7d. net. London: CASSELL & CO.

† *The Emu*. Jan., 1912. Quarterly 4/-.

London Agent: E. A. PORTER, 7, Princes Street, Cavendish Square, W.

Ornithological troubles are much the same all the world over, and at their meeting such questions as the destruction of birds for the purpose of adorning (?) ladies hats and the vexed questions of nomenclature were well to the fore. Among the articles we may notice an extremely interesting one on the 'Bush Birds of New Zealand,' from the pen of Mr. McLean, and that by Messrs. Cleland and Johnston on the Relative dimensions of the Red Blood Cells in different species of birds deals with a hitherto neglected subject.

#### BRITISH BIRDS. \*

In the three months under review this periodical records a mass of short notes, which deal to a very large extent with the occurrence of the rarer species in different counties. Apart from these there are some notes on the Immigration of Nutcrackers into England last autumn, the nesting habits of the House Martin and the recovery of marked birds.

The December number contains an article on the Black-throated Diver and Grey Lay Goose, illustrated with some beautiful photographs by Mr. O. G. Pike.

#### A NEW ITALIAN JOURNAL. †

We have received the first numbers of the *Rivista Italiana di Ornitologia*, a bi-monthly periodical devoted to ornithology and edited by our member Professor Ghigi, assisted by Count Arrigoni degli Oddi, Francesco Chizi, Prof. G. Martorelli and Prof. Salvadori. These numbers contain some excellent articles including a long and comprehensive one on the birds of the Tuscan Archipelago, as well as some shorter ones on *Saxicola aurita*, *Falco vespertinus*, *Pelecanus crispus*, and the migration of Black-headed Gulls from the Baltic to the Adriatic as shown by the recapture of ringed birds. Short notes, reviews of current literature, etc. are also included. We must congratulate the editor and all concerned in having brought out such an interesting magazine and give it our best wishes for success which it undoubtedly deserves.

---

\* *British Birds*. Dec., 1911, Jan. and Feb., 1912. WITHERBY & Co., High Holborn.  
1/- monthly.

† *Rivista Italiana di Ornitologia*. Anno I. Num. 1-2. 120pp. and coloured plate.  
Stabilimenti Poligrafico Emiliano. BOLOGNA. 10 Lira per annum.

## THE YUCATAN JAY.\*

Mr. Beebe in his paper gives a careful description of the plumages of three Yucatan Jays, which were living in the Zoological Park, New York. Most previous writers have considered that the sexes in this species differed in colour, but, from the study of his captive specimens, the author shows that the supposed sexual differences are merely due to age, and that when adult the sexes are alike. The yellow bill and white tips to the rectrices, supposed to be characteristics of the female, are now shown to be merely marks of immaturity, and the full adult plumage is not assumed for at least two years.

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### "THE GAME-BIRDS OF SOUTH AFRICA."

"The Game-Birds of South Africa" is the title of an important work which Messrs. Witherby & Co. are about to publish. The book is by Major Boyd Horsbrugh, and will be illustrated by nearly seventy coloured plates, reproduced in facsimile from the very remarkable drawings of Sergeant C. G. Davies. The work will be in small quarto, and will be issued in four quarterly parts.

---

## THE SOCIETY'S MEDAL.

A medal has been awarded to Mr. W. T. Page for breeding the Indian White-eye (*Zosterops palpebrosa*). Ser. III., Vol. 3, p. 114.

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## PRACTICAL BIRD-KEEPING.

### XIII.—TOURACOUS, BOWER BIRDS AND BIRDS OF PARADISE.

By Mrs. JOHNSTONE.

Touracous are, I understand, classed with the Cuckoos, on the ground principally of the likeness of each when in the nest. I fear I am *not* scientific, for, in my opinion, the Touracous are totally unlike the Cuckoos. In their movements and ways there is no resemblance—the Cuckoo is principally insectivorous, the Touracous largely frugivorous.

---

\* The undescribed juvenal plumage of the Yucatan Jay, by C. WILLIAM BEEBE and LEE S. CRANDALL. *Zoologica*. Vol. I, No. 7. New York: The Society, The Zoological Park. 4pp. and 1 coloured plate.

The Touracous stand alone for grace of movement and beauty of form of colouring; in fact, there are no other birds living, as far as I know, that resemble them. The first specimen I ever had was a young bird, hand-reared from the nest and almost bare of feathers, with the exception of flight feathers and tail. She—for she turned out to be a hen Fraser's Touracon—was absurdly and delightfully tame and in the best of health. What her age was I could only conjecture, but now on looking back and comparing the ways of her baby son I should say she was about six months old.

I remember she filled me with amazement by the way she bolted large pieces of cuttle fish, she had evidently been denied grit or lime in any form. Later I was able to secure a mate for this bird, and the pair were installed in one of my aviary divisions, about twelve feet square with a larger outside flight beyond.

I cannot speak too highly of Touracous as aviary birds. I consider they take the first place, both for beauty, hardiness, and great intelligence. I may have been fortunate in my particular pair, but a pair of another variety I possessed were equally charming. They are easily kept on banana—it must be ripe, given *whole*, with a small strip of the skin peeled off—this will be entirely cleared out and the fruit keeps so much fresher than when cut up. A bunch of *sweet*, sweet-water grapes (these can be *very* sour) are also much liked, and elderberries, hawthorn berries and blackberries are much appreciated, also a lettuce, placed in a pan of water to keep it fresh. A few mealworms given daily are good, but at the best these are indigestible things. Silkworm eggs allowed to hatch, and the worm given when about an inch long, is worth a dozen mealworms and really not much more trouble. My tame hen was very fond of an earth worm, and it was a curious sight to see her dispose of a really large, strong worm. *Nothing* can wriggle like a worm, unless it is an eel, and yet the Touracon would walk slowly round it and catch one end and in a few quick gulps it was gone. It was amazing that this extremely lively creature did not upset her, or at least cause inconvenience, but she would spring lightly to her perch, cleanse her beak, and commence to caw or scold in her usual conversational manner.

When these birds commenced to nest, which they did early in May, the cock was very fierce, and the bird boy fed them in fear and trembling every morning. This delightful impudence was one of their most charming traits and they were a constant source of amusement to all.

Several young were hatched during the season, but only one reared to maturity, and this bird lived for two years in my aviary. He never was quite as tame as his parents, a curious fact, as I hoped he would be equally tame. Touracous love bathing, and, if given a shallow pan of tepid water, thoroughly enjoy themselves. They require plenty of room, as the flight is so beautiful, the carmine flight feathers only show when the wing is outspread, and a Touracou in a small division is absolutely wasted.

The sexes are not easy to distinguish ; at any rate I should be puzzled if asked to sex a single bird, but with a pair together it is easy to distinguish them, as the hen is much more feminine-looking, and is less fierce and more easily tamed. I think, too, the bill in the hen is smaller.

For *their* patience in fully rearing a young bird to maturity I was awarded a silver medal by the Avicultural Society. A proud moment and a memorial of these charming birds, which I much value. A full account of the nesting appears in Ser. 2, Vol. III. of the *Avic. Mag.*, page 25.

\* \* \* \*

The Bower Birds, of which I have kept several, are also interesting to keep, but much less easily tamed than the Touracous. In fact, I can say truthfully, I never succeeded in *taming* my birds at all. Probably they live entirely in the thickest of dense undergrowth and rarely appear in the open, unless to make and decorate their bower.

They are singularly shy birds, highly nervous, and to be kept with any degree of pleasure, both to the owner and bird, must have plenty of cover in which to hide and shelter. My birds were fully adult when imported, I mean by this fully grown, but not in the blue-black plumage an old cock assumes. If imported young, they might be more easily tamed, but mine were as wild as Hawks and always remained so.

I kept my five birds (*Ptilonorhynchus violaceus*) in a large aviary, about 15 ft. square, during the winter; and in the summer they had an additional outside aviary, in which were growing tall Rhododendrons, small shrubs and bracken, in fact a small piece of woodland wired in. They made a beautiful bower between two Rhododendron bushes, and decorated it with broken china (blue they preferred), sea shells, and any scraps they could find. About April, they built a rough nest of twigs, high up in a tall Rhododendron, and two young were hatched, but alas! as soon as they flew a bitterly cold night killed them. The young were remarkably thinly feathered and the June frost was too much for them. (*Avic. Mag.*, N.S., Vol. I., p. 64.)

That these birds are highly intelligent there is no doubt; the grief of the poor mother I shall never forget, and she quite forgot her fear of humans in the search for her dead babies. A good insectivorous mixture, with banana or sweet water grape are all these birds require, but the young were reared entirely on live insects, mealworms and cockroaches.

I have also kept, for a short time only, three specimens (either hens or immature cocks) of the beautiful Gardener Bower Bird (*Amblyornis subalaris*). They are hopelessly wild, in spite of every protection in the shape of thick fir boughs. I cannot say I felt any desire to keep them, as it is somewhat irritating after weeks of quiet and care to find no improvement, and only the same wild terror on your approach. These birds ultimately met their death from this cause, and died from an injury caused by hurling themselves against the wire divisions—too highly nervous to submit to the dignity of captivity, they are best left to their native wilds and freedom.

\*      \*      \*      \*

And now I come to the most wonderful of all birds—the Birds of Paradise.

Altogether I have had in my possession twelve different species of this superb family. Some I have only kept a short time, others have been years in my possession, but all are interesting and beautiful.

Those I am most familiar with are *P. raggiana*, the King Birds of Paradise, Huustein's Magnificent, the Six Plumed Bird

of Paradise and the Magnificent Rifle Bird. All these are hardy, with the exception of the King Birds, and these seem to me to need something we cannot give them. Personally, I believe they cannot stand damp and the quick changes of temperature for which our climate is famous, and for this reason would do much better in an *indoor* aviary, only they are very energetic birds and would quickly get fat if denied the possibility of exercise and given liberally too fattening food. All my Paradise Birds flew almost daily out of doors, summer and winter, and I do not think they mind a low temperature if they can move about freely.

They can all be fed on fruit and insectivorous food. To the latter I added a little chopped, well-boiled sheep's head, which they all liked and which I believe is very good for them. Apples they are particularly fond of; this was curiously proved when, late in the autumn, a hen Rifle Bird escaped from my aviary and was in the surrounding woods for many weeks. A neighbour—proud of his Ribston Pippins—was much, and very naturally, annoyed to find every morning several empty "shells" of apple skin on the ground. So curious was the way the apples were eaten, leaving quite three parts of the skin intact, that I felt sure my lost Rifle Bird was the culprit, a fact which was afterwards proved by her recapture when all edibles, such as apples and blackberries were over. When re-captured she was thin but perfectly healthy, and is now a member of the lovely collection at the Zoological Gardens.

As a family, they are undoubtedly very intelligent, an important point in an aviary bird. They get tame quickly, and several in my collection would take a grape or mealworm from my fingers.

Hunstein's Magnificent (*Diphyllodes hunsteinii*) is, or appears to be, the least intelligent. In the hen plumage these birds are bright and quick in their movements, but as soon as they assume adult plumage they become lethargic. A cock will sit absolutely still for as long as you can stand or watch, with his green breast plate spread out and his beak pointing upwards. Amongst green foliage he would be absolutely invisible in this position, and it is a wonderful instinct which makes him assume it when humans are present. When these birds fly, the rustle of the wings is an

interesting point I have never heard explained. It is like the loud rustle of silk and it is difficult to believe the wings make it alone. I think in the Rifle Bird it is the most noticeable.

The *Apoda* and *Raggiana* are very fond of mice, and woe betide one if it enters their aviary. The business-like way in which the poor captive is held firmly under the foot, each tiny limb broken by the powerful beak of its captor, shows it is not a chance appetite, but one that is natural to the bird in its native land.

Each different species has its own peculiar display, all somewhat ridiculous and yet very wonderful. Every gorgeous feather is made the most of for the attraction of the hen bird, who, I have often noticed, remains singularly unaffected and receives all the adoration in a phlegmatic and unappreciative manner. One hen King Bird invariably flew down to feed at the moment, when the cock, a living jewel, was prancing and dancing for her edification.

How many of these beautiful birds remain alive in England I do not know. Mr. Brook's collection at Hoddam Castle is a marvellous sight, and, undoubtedly, the finest collection of Paradise Birds in the world. Mine, alas! are only a memory, as much illness in my house, which included the birds' keeper, necessitated my parting with all.

## PRACTICAL BIRD-KEEPING.—CORRESPONDENCE.

### IMPEYAN PHEASANTS.

SIR,—Would it be too much trouble for you to reply either by letter or in your paper to a few questions about the Impeyan Pheasant.

I want to know whether they have been ever raised to maturity, and if so under what conditions. Last spring my pair laid eight eggs and I hatched four chicks. Three eggs were placed under a hen and the chicks only lived about two weeks. They refused to be brooded. The fourth was placed with some Golden Pheasant chicks and did much better, grew well and begun to feather. He died at about three-and-a-half weeks.

I do not think anyone in this country has raised any birds.

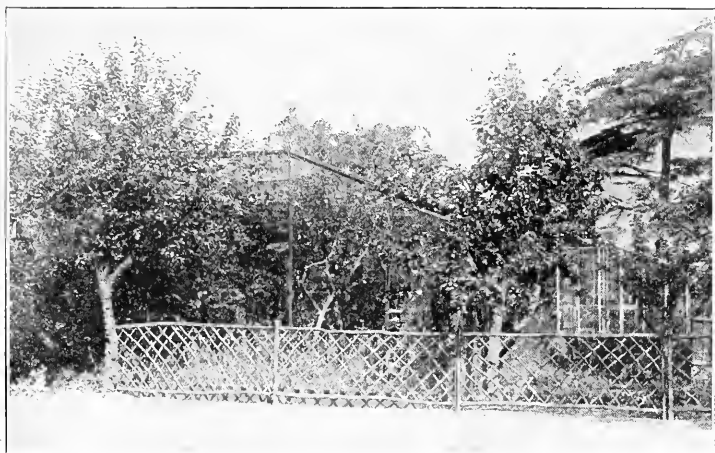
*Windyknob, Wenham, Massachusetts.*

JOHN C. PHILLIPS.

*The following reply has been forwarded to Mr. Phillips.*

DEAR SIR,—Mr. Bouhote, Editor of the *Avicultural Magazine*, has





OUTSIDE OF MR. PAGE'S AVIARY.



NEST OF INDIAN WHITE-EYE.

West, Newman proc.



asked me to answer your enquiries about rearing Impeyan Pheasants. I have found no great difficulty in rearing them to maturity, and at the present time I have an adult pair, both of which were reared here. I have had success both when the eggs have been left to the mother bird and when we have taken them and placed them under a domestic hen. I use cross-bred "Silkies," bred from Silky hens mated with Game Bantams, for rearing valuable Pheasants and Waterfowl. After the first week, the hen should be allowed to leave the coop with the young birds by day and should have the free range over an enclosure not less than 50 yards square, where the grass has been allowed to grow long, so as to afford cover and shelter as well as abundance of natural food. The young birds will do much better thus than when confined to a coop, for they are great foragers and take a great deal of exercise. Until the chicks are half-grown they are shut up in the coop with the hen at night.

A pair of my Impeyans have reared their own young more than once. They have an enclosure, about thirty yards square, round a large fallen tree (walnut), which affords a great deal of shelter from wind and rain and great choice of roosting place. The young perch when three or four weeks old, and it is a pretty sight to see them settling down for the night, perched between the parents, both of which will extend the wing over the nearest chick, for the cock Impeyan takes his full share of night duty. As might be expected of a bird coming from very high ground the Impeyan must have plenty of shade in hot weather, and this applies specially to the young chicks.

As to food, my young Impeyans and Tragopans get hard-boiled egg, chopped lettuce and onion, hemp-seed and moistened barley meal, and fresh ants' eggs; and I find the best way of giving this is to place it on a clean board. Nothing must be allowed to get in the least tainted or sour and no stale food is left about. As the birds get older a little wheat is given and more barley meal, Canary and other seeds, but I give scarcely any maize. A heap of sand or fine ashes should be within the young birds reach for dusting, and a good supply of fine sharp grit and, of course, pure water. I think the exercise which the chicks get when allowed to run free with a careful hen is very necessary, for I have known several cases of failure when attempts have been made to rear Impeyans in coops like the commoner Pheasants. Also it is very important not to expose the young birds to a fierce sun.

W. H. ST. QUINTIN.

---

#### NOTE TO BINDER.

The illustration of the nest of the Indian White-eye should have appeared last month but was held over owing to an unavoidable delay. When binding it should be inserted to face p. 115.—[ED.]

THE REPORT OF THE COUNCIL MEETING.

---

At a Meeting of the Council held on Feb. 5th, 1912, the Treasurer submitted the balance sheet for the year 1910—1911, showing that the deficit of a little over £30, with which the year started, had been wiped off, leaving a small balance in hand.

Amongst other matters that came up for discussion was the question of inviting members of the Society to a friendly and informal reception, at which tea would be served, in the Zoological Gardens, after the Council Meeting in the first week in July. In view of the success that attended last year's meeting of the same kind, it was decided to repeat the experiment in the coming summer. Due notice of this, with full particulars, will be published in the June number of the Magazine.

The question of members of the Society meeting and dining socially together at a restaurant in London in the evening, after the Council Meeting in Feb. 1913, was also discussed and generally approved, and it was decided to bring up the matter for final decision at the meeting of the Council in July. The object of such meetings is to give members of the Society the opportunity of becoming personally acquainted with each other.

R. I. POCOCK, *Hon. Business Secretary.*

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APPOINTMENT OF A SUCCESSOR TO  
MR. ARTHUR GILL.

PROF. G. H. WOOLDRIDGE, F.R.C.V.S., Hon. Veterinary Surgeon to the Zoological Society, has kindly undertaken to carry on, on the same terms, Mr. Gill's work as *post mortem* examiner of birds belonging to members of the Avicultural Society. Members, therefore, who wish to have their dead birds examined and reported upon, are requested to forward them addressed to:—

PROF. G. H. WOOLDRIDGE, F.R.C.V.S.,  
c/o The Zoological Society,  
Regent's Park, London, N.W.

R. I. POCOCK, *Hon. Business Secretary.*

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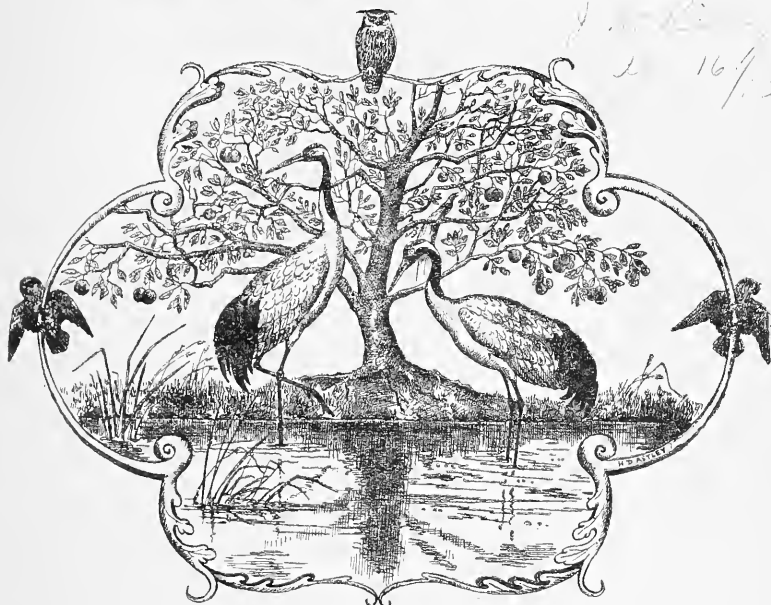
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# AVICULTURAL MAGAZINE.

Edited by J LEWIS BONHOTE, M.A., F.L.S.



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Vol. III. No. 5

The price of this

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APRIL,

—1912.—

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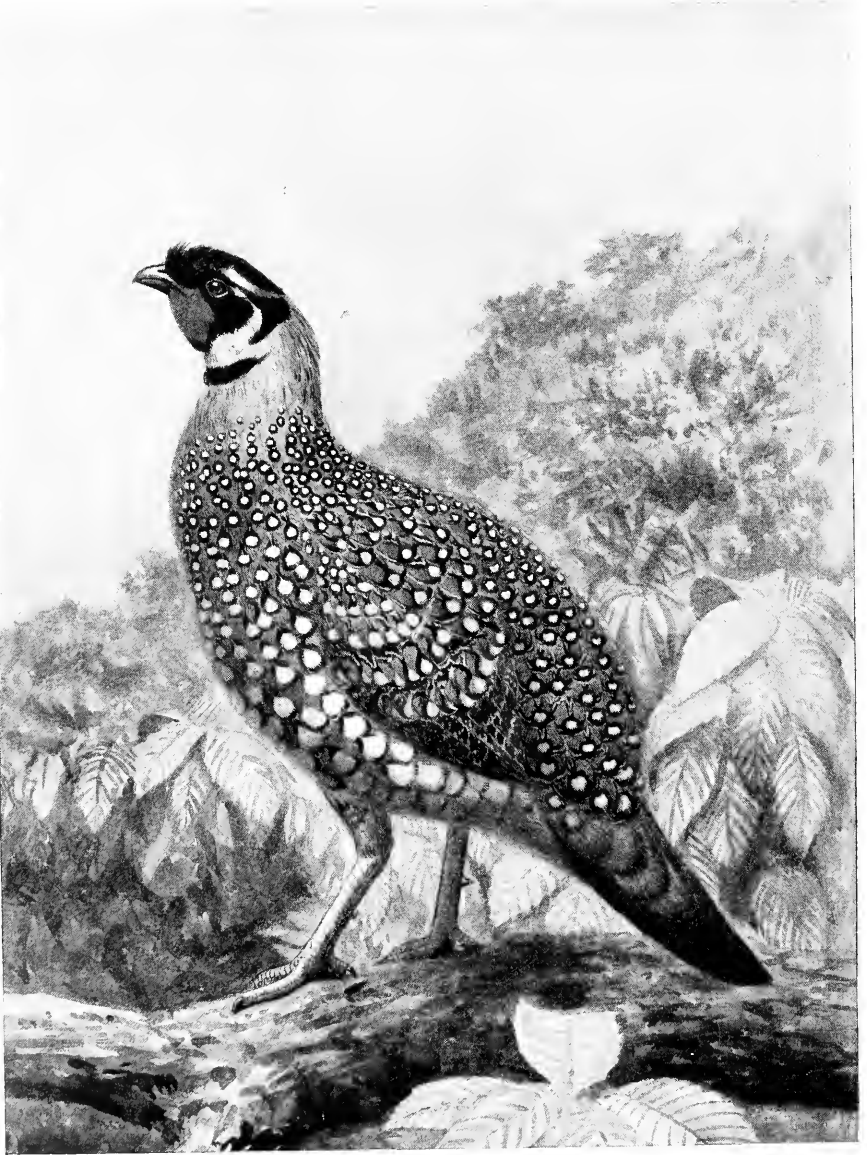
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SATYRA TRAGOPAN  
(*Cerionis satyra*).

West, Newman proc.

# Avicultural Magazine,

BEING THE JOURNAL OF THE

AVICULTURAL SOCIETY.

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APRIL, 1912.

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## THE DISPLAY OF THE SATYRA TRAGOPAN PHEASANT.

*Cerionis satyra.*

By C. BARNBY SMITH.

For some years past I have kept Satyra Tragopan Pheasants, and have had rather special opportunities for seeing the frontal display of the cock, which I regard as one of the most extraordinary sights I have ever seen in bird life. I gather from several sources that many people are not so fortunate as myself in this respect—and indeed I cannot but think if the extraordinary courting attitude of the bird were more fully known, Tragopans would be far more commonly kept than they are at present. I gather from a note to his interesting article on the Display of the Peacock Pheasant (*Avicultural Magazine*, June, 1911) that Mr. Pocock has only seen the lateral display of the Tragopan. Now the lateral display of a cock Tragopan in good plumage is interesting; that is, he presents one side of the head, body, and tail to the hen, and lowers one wing and raises the other until he almost looks like the mere skin of a bird stretched flat on a wall. This pose is constantly assumed during the breeding season (from February onwards) the cock taking up a position about a yard distant from the hen and repeatedly assuming a new position if she moves off.

This lateral display, however, is as nothing to the frontal display which I usually notice some three or four times each season. In this case the cock faces the hen (about two or three yards distant) and commences by crouching down slightly, ruffling his feathers, and spreading his wings which are slowly

flapped on the ground. The head is nodded repeatedly with increasing speed and the brilliant light blue horns gradually become inflated and extend forward from the black feathers of the head whilst the bib (or gular wattle), which is also blue with pink side stripes, is gradually let down to its full length. Whilst this is being done the shivering and rustling of the feathers have increased to an alarming extent, the body of the bird has been lowered quite near the ground, the wings are extended sometimes almost to their full width, and the whole business is preceded and accompanied (particularly in the early stages) by a curious noise like the "clacking" of two bones together, but how this noise is made I have never found out, though I should much like to know. When the bib has been extended to full length for a few moments the bird gathers himself together, moves forward about a yard, draws himself up to his full height (and it is surprising how high he can reach), keeps the bib fully extended in front of the hen for one moment, and then, within half-a-minute, horns and bib have entirely vanished and the cock is strolling about pecking grass as if nothing unusual had happened.

I am afraid anything I can say will quite fail to give an adequate idea of the extraordinary aspect of the bird whilst the display is at its height—indeed I think anyone coming suddenly upon the spectacle would scarcely believe they were looking at a bird, the spectacle is so demoniacal.

So much for the conduct of the cock ; but, I think, if carefully considered, the conduct of the hen is even more curious, or perhaps I should say more inexplicable, for she seems absolutely lacking in interest as to the display of the cock.

Whether the cock poses purposely in this grotesque way in order consciously to make the greatest display of horns and bib, or whether horns and bib have been developed because the cocks have everlastingly posed in this way does not seem to affect the question that one would expect the hen to take some sort of apparent interest in the display.

There is an interesting chapter dealing with this and similar questions in Lloyd Morgan's "Animal Behaviour," where Dr. Groos is quoted as laying stress on "the coyness and reluctance of the female," and as making the suggestion that the

display of the cock bird may cause the female to exercise "an unconscious choice."

As illustrating the coyness and reluctance of the female bird, the female Cuckoo is quoted as giving an alluring laugh that excites her mate to the utmost, when she dashes away through the tree tops inciting him to follow; also the female Kingfisher and the Bower Bird are mentioned as examples of female birds proceeding on similar lines. Granted that this is so in most cases, is it not strange that when the display of the cock has been developed to an extraordinary degree the hen should appear quite unmoved. The matter may be quite plain to the scientists, but for my part "I have come out by the same door I went in."

If it be argued that the hen Tragopan is really affected by the marvellous display of the cock and that she has methods of showing her feelings unknown to us, it certainly seems very curious that her emotion or interest under all, or almost all, other circumstances can be readily seen. If my hen Tragopan is angry at a Tree Partridge coming to feed too near her; if she is excited at roosting time or previous to laying, or if she is pleased with sunshine or fresh cabbage, or depressed by sleet and wet snow, it is quite easy to tell her state of mind by observation, whereas during and after the marvellous display of the cock she will stroll about apparently taking not the slightest notice, and often turn her back on him and go slowly away, wandering about just as she often does when he is nowhere near.

The same thing may be doubtless observed to a certain extent with other kinds of Pheasants, but my point is the curious fact that where the display of the cock is greatest the apparent indifference of the hen should be absolute. Of course, it is always unsafe to judge from a limited personal experience and observation, and I for one should be much interested to learn what other members of the Society who have kept Tragopans have to say on the point.

I do not for a moment think that any member of the Society will be found to say that the frontal display of the Satyra Tragopan is anything else than an extraordinary display of great interest.

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## THE BLUE THRUSH AND HANGNEST.

By HELEN ATHERLEY.

The Blue Thrush and the Hangnest have been the subject of many articles in the *Avicultural Magazine*, but I think they are both such interesting birds that still more may be written about them, as, though they both are birds with the very strong characteristic ways and manners of their kind, they are also both birds with many individual traits.

I am the happy possessor of both—but I must not say “possessor,” for alas! “Blue” is only with me temporarily, and his real owner may ask for his return at any moment—this I earnestly hope may never happen, for Blue is one of the most interesting birds I have ever had. His temper is not all that it ought to be, he is a born fighter and no sooner is he out of his cage than he “goes for me” with all the ardour of his undaunted spirit. If on the floor he attacks my feet, if on a table or sofa he flies straight at my hands and merciless are his pecks, but his attacks look worse than they really are, and after a few moments he will settle down. His favourite perching place is on the fender, where he spreads his lovely wings, cocks his head on one side, ruffles up all his feathers and enjoys the warmth of the fire on his back. He will also fly to the top of the fireguard (made especially large for the purpose) and there he will sit, crouched down, until he is so hot he has perforce to go. I cannot think it is very good for him, but he so enjoys the warmth I have never the heart to remove him.

He is terribly jealous of Billy, the Hangnest, and when they are both out in the room together I have constantly to be on the watch in case a serious attack on Blue's part should ensue, but Billy is above fighting and takes but little notice of Blue. This is quite at variance with what other people have written of their Hangnests, so that I take it Billy is of a better disposition than most of his kind, as it certainly is not from want of courage on his part, he is boldness itself with my dogs, though I must confess a strange dog coming into the room upsets him greatly. Billy's great idea of happiness is to get into the pocket of my jacket, or inside the jacket, where he nestles down under my arm, and will stay there for hours whilst I am reading.



I have made a curious little sleeping box for him, like a tunnel, an opening at each end, and when the lights are lit he is very restless and unhappy until this contrivance is put into his cage, when he at once disappears from view and is seriously annoyed if I turn him out for a fly about the room.

His is a far more formidable beak than Blue's, and so quick are his movements that he can draw blood three times from my finger by rapid "hammerings" before I can stop him, but, barring this trick of hammering me at times, which he only does when very angry, he is one of the most delightful of companions.

I made the tunnel sleeping box for him as I found that whenever he got tired of flying about the room he would take refuge under the card back of a photograph frame, or under a book if he was luckily enough to find one overlapping another on the table, or behind a sofa cushion, anywhere, in fact, where he could have something over and near his head, hence the sleeping box and apparently great happiness and satisfaction to Billy.

My happiness would be greater if Billy and Blue would become friends and companions, but that, I fear, is a Utopian state which will never be. Billy is curiously attracted by a sight of himself in the looking-glass; he throws his head back, draws himself up to his full height and whistles defiance to his supposed enemy. Blue, on the other hand, takes no notice of his own reflection—this may mean that he possesses more reasoning powers than Billy—but personally I put it down to want of imagination. I must not belittle Blue, but the real fact is that Billy is the one that has my heart, but perhaps that is because he is my very own and Blue is only a lodger.

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## DIARY OF BIRDS SEEN ON THE WHITE NILE.

By RICHARD STAPLES-BROWNE.

### PART I.

On January 10th of last year I left Cairo for Khartum, where I was due on February 1st, to join the Soudan Government's steamer "Amara," which was starting for a tour on the White Nile. The steamer was to proceed up the main stream as far as Kio, and then pass through the Bahr el Zeraf, the channel

of which had been sufficiently enlarged by dredgers to admit of the passage of our small boat, and re-enter the main stream of the Bahr el Jabel near Shambé, and then continue to Rejaf, the farthest point to which our boat could go owing to the shallowness of the river. Rejaf is a few miles south of Gondokoro, the Ismailia of Sir Samuel Baker, which is the southernmost station reached by the monthly mail service. Roughly speaking, Rejaf is 1070 miles south of Khartum and 540 miles north of the Victoria Nyanza. I had heard very glowing accounts of the numbers of species of birds and animals that could be seen on such an expedition, but on my return I had the satisfaction of feeling that I had seen more, in the short time I was in the Sudan, than the most enthusiastic traveller had led me to expect. Before starting I paid some visits to the excellent collection of animals in the Giza Zoological Gardens to acquaint myself with the forms I might meet. Capt. Flower and Mr. Nicoll were exceedingly kind in pointing out to me the rarer Soudanese species, and on my return to Cairo Mr. Nicoll helped me to identify many of the birds I had come across from the descriptions in my diary.

I made the journey from Cairo to Wady Halfa by river, changing steamers at the first cataract. The birds of this part of the river have been so often described that I can add nothing to what has already been written. I was, however, very pleased to see for the first time such beautiful forms as the Pale Crag Swallow (*Cotile obsoleta*) at Bedrechén, the White-rumped Chat (*Saxicola leucopygia*) at Thebes, the little Green Bee-eater (*Merops viridis*) at Assiut, and the Black and White Kingfisher (*Ceryle rudis*) which is frequently met with on the river.

I arrived at Wady Halfa on January 26th and took the train for Khartum. We were, however, considerably delayed in the desert by a sand-storm, and consequently did not arrive until the morning of the 28th. Some of the most noticeable birds in Khartum are the Yellow Sparrow (*Passer luteus*), and, of course, the ever present Kite (*Milvus migrans*).

On the morning of February 1st I went on board the "Amara," a small stern-wheeled steamer. We were a small party of twelve. The steersman and crew were Arabs. The boat was extremely comfortable, and the engineer, who as usual was a

Scotchman, and had been for several years in the Sudan, had very much interesting information to give on the country. In short, we made a journey through a wild country in a most pleasant and even luxurious fashion, and I have no hesitation in recommending such a tour to any who are fond of natural history. I will now give those parts of my diary which relate to the birds and animals met with at the various places at which we stopped or were seen from the deck of the steamer.

Feb. 1st. We started from Khartum at 11.15, and steamed down the Blue Nile to Omdurman, where the junction of the Blue and White Niles occurs. Here we turned south. The river is very wide. The banks are very low and are covered with an enormous quantity of goats. There were plenty of Wild Fowl at the water's edge, and among them the Whistling Teal (*Dendrocygna viduata*), the Egyptian Goose (*Chenalopex aegyptiacus*), the Spoonbill (*Platalea leucorodia*) and the Grey Heron (*Ardea cinerea*). A few Egyptian Vultures (*Neophron percnopterus*) were dotted about. There are several low trees about, and among them the famous Harraz tree, under which General Gordon is said to have sat, and is now called "Gordon's tree." After lunch, we passed enormous flocks of geese. It was difficult to believe that the birds could be present in such quantities. In the middle of one flock I saw our first crocodile. Later in the afternoon we passed a flock of Flamingos (*Phoenicopterus roseus*). About four p.m. we passed the Jebel Auli, the hills from which the building stone of the neighbourhood comes. There were several Storks about, the White Stork (*Ciconia alba*) and Abdim Bey Stork (*C. abdimii*), also a large flock of Grey Cranes (*Grus communis*). The natives are almost entirely Arabs on this part of the river. They have a few cattle, those I saw were mostly humped.

Feb. 2nd. Early this morning I saw several Lady William Cecil's Crowned Cranes (*Balearica pavonina ceciliae*) as well as some large flocks of common ones. Some Lesser Black-backed Gulls (*Larus fuscus*) were flying over the river. It is interesting to note that we are 2,000 miles from the mouths of the Nile, so they have followed the river some considerable distance inland. At nine a.m. we reached El Dueim, a large town inhabited by Danagla Arabs and a few negroes. From here a caravan route

goes to Kordofan, and here are brought large quantities of gum for shipment. After leaving the town one finds that the banks of the river are more wooded. The trees are mostly Acacias. There are some fields of doorah. On the banks I saw several Demoiselle Cranes (*Grus virgo*), Buff-backed Herons (*Ardea bulbulcus*) and some Cormorants (*Phalacrocorax carbo*). Several crocodiles were seen basking at the river's edge. At five p.m. we stopped for wood at a small village called Edbekki. It consisted of a few conical straw huts inhabited by a mixed population of arabs and negroes. Some of our party went shooting and brought back some Blue-wattled Guinea Fowls (*Numida ptilothyncha*) and Spur-winged Plovers (*Hoplopterus spinosus*), both of which subsequently proved excellent on the table. A specimen of the Equatorial Palm Dove (*Turtur senegalensis aequatorialis*, was also shot. I found several nests of the Ethiopian Weaver Bird (*Quelea quelea aethiopica*) on the bushes overhanging the river. There were several monkeys about, probably the Grivet Monkey (*Cercopithecus aethiops*). After leaving the wood-station we passed several backwaters and low islands covered with reeds, on one of which I saw our first Papyrus. During dinner this evening the sky was lighted up by an enormous bush fire.

Feb. 3rd. We arrived at Kosti shortly after midnight and tied up till dawn, so as to pass through the new White Nile Bridge (Rabak), which had to be opened for us, at seven a.m. The bridge carries the new railway which is being constructed to Kordofan. At ten a.m. we stopped at a wooding station and I went along the river bank through the coarse grass. I saw several Abdim Bey's Storks and some Paradise Whydah Birds (*Vidua paradisea*) which were in beautiful plumage. We are now well in the country of the Shilluks, the northernmost negro tribe on the river. I met two of their spearmen carrying a fine Python (*P. sebae*) which they had just killed in the rushes. I measured the snake and found it over nine feet in length. A great quantity of the empty shells of a large snail (? *Ampullaria*) were strewn along at the water's edge. In the afternoon we continued our journey and passed through a coarse grass country and a little forest land. We saw several hippopotami in the river. Generally only the head was visible above water. I saw some

buffalo through glasses at some distance inland. To-day I saw for the first time some Sacred Ibis (*Ibis aethiopica*). This is the bird which is so generally associated with Egypt, but is apparently never seen there in spite of the assertion of nearly every Dragoman to the contrary. Several Bee-eaters were seen flying over the river, probably *Merops nubicus*, *apiaster*, *persicus*, *superciliosus* and *viridis*.

Feb. 4th. At a wood-station early this morning some of our party came across a herd of fifteen Korin Gazelle (*Gazella rufifrons*), two of which they shot. At 11.30 we arrived at the town of Renk, inhabited chiefly by Shilluks. I saw a large number of Waxbills of various species in the bushes near the town. In the afternoon we passed through some thick forest, consisting almost entirely of Acacias, in which I saw a large number of the Blue-Wattled Guinea Fowl.

Feb. 5th. I again saw large numbers of Waxbills at the wood-station where we stopped this morning, and among them recognised the Cordon Bleu (*Estrilda phaenicotis*). Early in the afternoon I was lucky in seeing three wild Ostriches (*Struthio camelus*) in a lightly wooded grass country. At three p.m., we arrived at Melut, a Government telegraph station, with a mixed population of Soudanese and Shilluks. In the late afternoon I saw several Black-winged Stilts (*Himantopus candidus*) and some Marabou Storks (*Leptoptilus crumeniferus*).

Feb. 6th. We arrived at Kodok, formerly known as Fashoda, at seven a.m. One passes through a mosquito-infested swamp by means of an embankment to reach the town. There is a small garrison stationed here. The "Mek," or King of the Shilluks also resides here. We saw several of their canoes on the river, both dug-outs and lighter craft made of ambash reeds tied together. Major Marchand's garden is still kept up. A short distance south of Kodok I saw some Pelicans (*Pelicanus onocrotalus*). In the afternoon we called at the station of the Austrian Roman Catholic Mission at Lul. At five p.m. I had the pleasure of seeing through my glasses some Giraffes, apparently three adults and one young one. As far as I could judge, they were a little over a mile from the river and were standing in a low scrub. About sunset we landed at a small Shilluk village, the inhabitants

of which, apart from the annual visit of the inspector, do not come into contact with white people. The Sheikh received us with ceremony and presented a sheep to us. Afterwards he ordered the drums and horns to be brought, to the accompaniment of which his men performed the most fearsome and awe-inspiring war dance it has ever been my privilege to behold. The performance concluded with a charge, the men halting with their spear-points a few inches from our noses.

Feb. 7th. This morning we wooded at Kio, and entered the Bahr el Zeraf about eleven a.m. The channel of this river is narrow and is often overgrown with "sudd," which consists of papyrus and other reeds. We frequently encountered floating islands of sudd. There is much high coarse grass in the surrounding country, in which one sees a large number of game animals, among which I recognised Buffalo, Sable and Roan Antelope, Hartebeest and Kob. Waterbuck are present in vast numbers. I calculated we must have passed at least 700 between three and seven p.m. Gazelles are also fairly numerous. I again saw some Ostriches, also some Nubian Bustards (*Otis nuba*) and some Chukar Partridges (*Caccabis chukar*). The beautiful White-headed Vociferous Eagle (*Haliaeetus vocifer*) is common, and I saw several nests of this species in the trees near the river banks. Bee-eaters were also present in large numbers. Later in the afternoon I saw large flocks of the Hagedash Ibis (*Ibis hagedash*). These grotesque-looking birds performed several evolutions in the air and somewhat resembled a flock of rooks. Insects, including many stinging forms, are unpleasantly numerous. At about eight p.m. we stuck fast, the sudd having broken one of the blades of our wheel, and as soon as the sun set there was a raw damp feeling together with a smell of decaying water weed. The chilliness is accentuated by the extreme heat during the day.

Feb. 8th. Our wheel was mended at one a.m. and we proceeded at six. The river becomes very tortuous here. Trees are few. During the morning we saw a large herd of Elephant on the bank of a backwater. The natives here are of the Nuer tribe. We passed some hunting parties of them. In the afternoon the view became extremely dull and monotonous. The country is flat, broken only by several large ant-hills. Animal life

was scarce. At sunset, innumerable frogs commenced croaking. Later, a large number of fire-flies appeared, and as soon as the lights were turned on we were boarded by swarms of mosquitoes.

Feb. 9th. At three a.m. we arrived at the dredgers, which have been working at the sudd for some time past. It would probably repay a zoologist to live on board the dredger to examine the numerous species which are brought up. The country now gets more wooded and we passed some Dom palms. During the morning I saw some of the brilliantly-coloured Saddle-billed Storks (*Ephippiorhynchus senegalensis*). Some Whistling Teal were shot. I also saw some specimens of Rüppell's Spur-winged Geese (*Plectropterus rueppelli*), also a species of Darter (*Plotus congensis*). This latter bird swims with the body entirely submerged. Navigation above the dredgers is difficult as our wheel frequently gets clogged with sudd. There are also many shallows in the river. Hippotami were numerous, and owing to the narrowness and shallowness of the channel it was difficult for them to get out of our way; indeed we experienced a very violent blow on one occasion during the efforts of one to pass under our boat. At four o'clock I saw the most interesting birds which I came across during the whole journey. Two Shoe-billed Storks (*Balæniceps rex*) were in the rushes at the side of the river. Our boat passed quite close to one of them, but it remained absolutely motionless and paid not the slightest attention to our presence. Our engineer told me they are rare in this neighbourhood, but are more often met with in the Bahr el Ghazal district. I felt extremely fortunate in seeing this extraordinary species. To-night we pass through the new cutting from the Bahr el Zeraf into the Bahr el Jebel, which follows the course of that made by Sir Sammel Baker. To-morrow we shall reach Shambé on the main stream, 843 miles from Khartum.

(To be continued).

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## MILITARY STARLINGS.

By MRS. E. WARREN VERNON.

I have a pair of Military Starlings (*Trapealis de philippi*) and it may be of some interest to members to have a short account of them. Mr. Philip Gorse, in his article in this magazine under the title of "Notes on some birds in the Andes in the neighbourhood of Auncagna," says: "I do not know why these birds are not freely imported, as they have everything in their favour as aviary birds." I can fully endorse this, they are most gentle towards the other inmates of my conservatory-aviary, and these consist of Waxbills, Nightingales, Long-tailed Tits, etc., so there is a variety for them to quarrel with if so inclined; and, considering their long punishing bills and heavy build, it is the more remarkable, as I think Starlings usually are most aggressive.

Both these birds have lovely red breasts, the cock bird especially so. They both sing a really pretty song and very loud, and the scarlet breast adds to the attractiveness of them as inmates of the aviary. They eat a good deal of seed, Parrot mixture, besides soft food and insects, and I found them eating a raw beetroot that was put in for some Agouti.

There are some hot-water pipes under the floor, which let the heat up through an ornamental iron opening, and in the cold weather the two birds used to squat over this place, so I put a box with open side and no floor to it, and they used to go and sit inside; it must have been like a Turkish bath, but they seemed to love it.

I have two Agouti, and they run with the birds very happily; the Starlings, however, are quite masters, and before the young Agouti was born they used to lie in front of the Agouti's bed and would not allow the Agouti to enter. Now, however, there are two babies, and the parents do not mind the Starlings any more. The cock bird used to drive the Agouti away from the food for pure mischief, and it used to give me a good deal of amusement watching them.

I should be glad to know if other members have kept these amusing birds, and if they have ever been known to breed in captivity.

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NOTES ON SOME HABITS OF THE  
KOKLA OR WEDGE-TAILED GREEN PIGEON

*Sphenocercus sphenurus*, (VIGORS),

IN CONFINEMENT.

By PELHAM T. L. DODSWORTH, F.Z.S., M.B.O.U.,

*Member of the Bombay Natural History Society.*

*(Concluded from page 135).*

When inspecting the nests of Green Pigeons, I have often wondered whether the twigs composing them have been picked off the ground or broken off from the branches. I am inclined to think that it is the latter, as the ends of some of the twigs, which I have minutely examined, showed unmistakable signs of having been wrenched off. I have seen Koklas carrying sticks in their mouths, but how they get them is another question. The point is an interesting one, and well worthy of further observation. But to return to the subject of my captive birds.

Spring had now come, and the Koklas, which were still sharing their cage with the Doves, began to get unusually active. The cock kept chasing the hen from perch to perch, and constantly uttered his melodious notes, which were now complete. Major Magrath likens these to the syllables, "Kō-Klā-Kōr, ōr, ōr, ōr, ōrlll, illiō-Klā," but Blyth's description of them is, perhaps, the best. He says "the notes bear some resemblance to the human voice in singing, and are highly musical in tone, being considerably prolonged and modulated, but always terminating abruptly, and every time the stave is repeated exactly as before, so that it soon becomes wearisome to an European ear." I may add that both male and female utter the same notes and, while singing, the tail is moved gently up and down, as if keeping time.

Remembering the old adage that "two is company," and hoping that under such a condition the Koklas might be induced to form a matrimonial alliance, they were separated from the Doves and put into another cage to the mutual advantage of both couples, and shortly afterwards we witnessed the courtship of the male bird. He would utter his notes, puff out his throat, expand his tail feathers, spread out his wings, and hop from perch to perch with bowed head, uttering a low "coo" the whole time. The hen

did not seem to relish these attentions, for she would drop down on to the floor of the cage, as if to avoid her mate, who immediately followed her, and with a low "coo-coo" called her into a corner of the cage. Both birds would then pretend to pick up something from the ground, and after a short time fly back to their perches. This was constantly repeated during the day, and the proceeding on the part of the male struck me as being very similar to that of a cock in the poultry yard calling his hens round him when a dainty morsel has been found. During the breeding season here, I have often heard the male Kokla in the wild state utter the low "coo-coo" note after his usual song, but have never up to this had the good fortune actually to witness the courtship.

Just when matters were reaching a most interesting stage with my birds, the hen suddenly sickened and died, and it is almost impossible to describe in words the intense grief which was displayed by her mate. For a long time he walked round and round her body, singing and calling her, and would not allow any one to touch her. When the dead bird was eventually removed and placed on the ground outside the cage, he still kept walking round and round, singing and calling her. For the whole of that day, and for several days after the death of the hen, he was perpetually whistling at short intervals and going through the form of courtship already described, and there seemed no doubt whatever that he was greatly distressed at the domestic calamity that had befallen him.

Three months have now passed since the death of the hen, and the cock seems to be somewhat reconciled to his loneliness. The courtship proceedings are still occasionally indulged in, but as there is now no fair one to whom he can pay his attentions, he eliminates the final act of dropping in the corner of his cage, and calling to his mate. He seems at times to get tired of his plantain diet, and for two or three days at a time will eat nothing else but grain—a habit no doubt acquired from his quondam companions, the Doves: he also occasionally eats large quantities of mud, apparently as an aid to digestion. The sound of a bugle or the striking of a clock sets him off singing at once. His powers of discernment appear to be highly developed. I

have three dogs in the house, and these appear to be on the most friendly terms with him : he does not mind their presence in the least, and sometimes when he gets a chance even pecks at their noses, when the animals come too close to his cage. But when a stray dog happens to come close to him the bird recognises the difference at once, and begins fluttering and dashing himself against the bars of his cage. The house dogs appear to have associated the noise made by the bird's fluttering with the presence of a strange dog, and immediately rush out and soon see the intruder off the premises.

Before concluding these notes, I will add a few remarks about the plumage of this species in captivity. The curious thing here is that the colouration assumed by such birds differs in many respects from that of the wild ones. Indeed the differences are so great that Blyth was actually led to describe a caged specimen as a new species under the name *Vinago cantillans*.

BIRD IN CAPTIVITY.

Sex ♂.

(a) Head, neck and lower plumage *light green*, with only a *faint* touch of orange on the crown and breast.

(b) Upper back pearl grey, passing into *dull leaf-green* and *no maroon\* whatever on middle of back* : only the lesser wing-coverts are dull maroon.

(c) Rump, upper tail-coverts, median and larger wing coverts and exposed portions of tertiaries *dull leaf-green*.

WILD BIRD.

Sex ♂.

(a) Head, neck and lower plumage *yellowish green*, very distinctly tinged with rufous on the crown, and with orange and a wash of pink on the upper breast.

(b) Upper back greyish, passing into maroon red on *middle of back* and lesser wing-coverts.

(c) These parts are *olive-green*.

In other respects the specimen appears to be similar to that of the wild bird. Of course it must be remembered that my

\* Since writing these notes, I have shot a young male showing only *faint* traces of maroon on the back, and from this it would seem that it is a sign of age, when the *whole of the back* gets covered with maroon.

bird is just about a year old, and has not yet moulted. When it *does* moult, I daresay further differences in its plumage will be apparent.

Blyth's account of the caged specimen which had *moulted*, and which he described as *Vinago cantillans* is interesting, and as it is buried in the Journals of the Asiatic Society of Bengal (Vol. xii., pp. 166-167), which are not easy of access, I reproduce it below practically *in extenso* :—

“Predominant hue a delicate pearl-grey, conspicuously tinged with ruddy on the crown and breast: fore-part of the wings maroon-red, which also deeply tinges the scapularies and interscapularies: belly faintly tinged with yellowish-green, and a trace of dingy green margining the rump plumage and the smallest tertiaries, also prevailing on the coverts of the secondaries, the greater series of which are slightly bordered with whitish-yellow: primaries and secondaries dusky, together with the extremities of the outer tail feathers: vent white, the feathers of its sides having dark ashy centres; and lower tail-coverts whitish-buff, being more or less ashy at base. Irides as usual in this genus, or having a crimson ring encircling a violet one: bill and bare skin around the eye glaucous-blue; and legs and toes reddish carneous. This remarkable species is essentially a *Vinago*, though differing considerably from the typical species in the form of its bill and feet; insomuch that it might, with propriety, be elevated to the rank of a particular subgenus: the former is comparatively slender and elongated, having the basal three-fifths membranous and tumid, and the corneous extremity feeble; and the toes also are slender, and not broadened underneath. The specimen described was purchased alive, and was said to have been brought from Agra; but some *shikarees* to whom I shewed it decidedly recognised the species, at once remarking on the peculiarity of its note, and said that it is procurable in the Soonderbuns. Its coo is extremely remarkable. . . . This bird was sold to me as the *Kokla* Pigeon of the Upper Provinces, great numbers of which are kept in cages by the natives, for the sake of their music; but enquiry has led me to ascertain that *V. sphenura* is the true *Kokla* of the Upper Provinces, whereas in Bengal this term is applied to *V. bicincta*, Jerdon, both of these species differing from the common Hurrial (*V. militaris*) by having coral-red legs instead of gamboge yellow ones, which is generally mentioned as the distinctive feature of the *Kokla*; the *V. bicincta*, however, has a less musical, or at least less varied, note than the Hurrial. The *coo* of the latter, if such it can be called, consists of a melodious deep-toned whistling note, varied by a guttural sound; and those who are unacquainted with it, would be apt to mistake it for the note of a true singing bird: that of *V. bicincta* is equally melodious, but less prolonged as well as less varied. I know of only the two last-named species of this genus in the vicinity of Calcutta.”

The Superintendent of the Zoological Gardens, Alipur, Calcutta, has kindly informed me that he has several Koklas in the collection; that some have been living in the Gardens for the last five years, but that they have *never* bred in captivity. He adds that "though these birds are denizens of a cold climate, they bear captivity in the plains of Bengal much better than the Bengal Green Pigeons."

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## BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

Although the weather during the past month has been anything but ideal, the feeling of Spring has had a marked effect upon the birds. A pair of Earl's Weka Rails have gone so far as to hatch one sturdy black chick from a clutch of three eggs; a pair of Andaman Teal have made a nest in one of the boxes fixed on a post some four or five feet above the ground; Egyptian Geese are sitting, while both Elliot's and Peacock Pheasants have commenced to lay. Birds, like plants, seem to be some weeks ahead of their time this spring.

One of the most interesting sights which can be seen almost any day now is the wonderful display of the male Peacock Pheasants about which Mr. Pocock gave us such an excellent paper last year. He begins by scratching the ground for some tit-bit, having found which, he holds it in his bill and with a series of clucking sounds calls the hen. As she approaches he gradually lowers his breast and expands the tail and wings. When the hen is within a foot or so, with a forward jerk of the head he throws the grain of seed or whatever he is holding, towards her, and expands the tail and wings to the utmost extent, while the head is pressed down sideways against the wing. He looks like nothing so much as a fan set with jewels.

Amongst the arrivals for the past month are two rare Indian birds, kindly presented by Mr. Alfred Ezra, namely, a Racket-tailed Drongo and a White-capped Robin, the latter of which is only the second example the Society has possessed.

Another noteworthy addition is a splendid adult example

of the African Tantalus (*Pseudotantalus ibis*), a small and brightly-coloured Stork from tropical Africa, presented by Sir Walter Egerton, K.C.M.G., High Commissioner of Southern Nigeria. Its plumage is white with a delicate rosy tint, the naked skin of the face is red, and the large pointed bill golden yellow. (*See illustration*).

The only other addition of importance is a male specimen of the rare Ashy-headed Goose, one of the most beautiful of the elegant genus *Chloephaga*. D. S-S.

## CORRESPONDENCE, NOTES, ETC.

### THE BREEDING OF NIGHTINGALES.

[We have much pleasure in publishing the following most interesting letter on the breeding of Nightingales from Mr. JEFFREY, a well-known breeder and exhibitor of British birds, and we hope that later on Mr. Jeffery will give us a further and more detailed account of his methods and successes.—ED.]

SIR,—The breeding of Nightingales is a very old pastime of mine, as you will see by the paper I send you.

Twelve months ago I went to Leicester to design an aviary for my friend Mr. Sills of that town, in which he placed a pair of Nightingales. They went to nest and successfully reared young, which he hopes to breed from this season. I wrote an article to *Cage Birds* last year offering to anyone the privilege of paying Mr. Sills a visit to see the young birds in the nest and if they so wished to photograph them, but I believe no one took advantage of his offer, and I was rather disappointed, as this was the first gentleman I could persuade to try the breeding of these birds in confinement. I had hoped to interest a good many people in the hobby of breeding soft-bills, and by dint of perseverance I think I have got the thin edge of the wedge in now, as I have been lecturing to several Ornithological Societies and several fanciers are trying the experiment this year. I am hoping this year to try a cross between a tame cock Robin and a Nightingale. Nightingales are most adaptable birds for cage and aviary and go to nest very readily. I have bred Robins, Skylarks, Thrushes and Nightingales in my aviaries at Kidderminster. Last summer a pair of my Nightingales attempted to go to nest in a workshop, it would have been a great curiosity. I have never had my birds or aviaries photographed, and could only give sketches and descriptions of same, but this summer all being well I shall certainly do so. I am very pleased that more interest is being taken in British birds, especially soft-bills. I have made a life study of British birds, and sent four pairs of Nightingales to the Crystal Palace Show as long ago



PEACOCK PHEASANT IN FULL DISPLAY.



AFRICAN TANTALUS (*Psittacus*) (M.). West. Newman photo.





as 14 years back ; since then I have won prizes at all the important Shows in the country, third at the Palace this year. J. JEFFREY.

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From the *Birmingham Weekly Post*, 22nd July, 1899.

"The breeding in confinement of that king of all song birds, the Nightingale is certainly unique in the annals of ornithology. It is, however, a hobby which Mr. Jeffrey, of Kidderminster, has followed most successfully.

The aviaries, I am credibly informed, are very extensive and in the open-air, running the whole length of the garden and built with a lean-to roof against a back wall made of galvanized iron, similar to that which is used for roofing purposes and measures about 60 feet long, 8 feet high at the back and 7 feet wide, and is divided into sections, each compartment being separated by a wood and wire netting partition with doors leading from one to the other, and the whole structure covered with half-inch mesh wire netting. A walk, formed with bordering tiles, runs through the aviaries from end to end with a narrow border on each side, where plants and shrubs grow and blossom freely, and the birds take advantage of the covert provided by the latter, and make their nests and rear their young at the foot of the shrubs, which abound. To complete the excellent arrangement of these ideal aviaries, where everything is carried out with care and forethought and adapted to resemble in miniature as far as possible the natural haunts of the birds, to which undoubtedly much of the success is due ; a small stream of water a few inches wide and two inches deep is made to run constantly through the whole length of the structure."

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## REVIEWS.

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### MIGRATION. \*

The Migration of Birds is a subject in which almost everyone, ornithologist or not, takes an interest, but about which much still remains to be discovered. There should, therefore, undoubtedly be a good demand for a popular book dealing with the main theories as to the method in which many species of birds make their biennial journey from Continent to Continent. Unfortunately Mr. Coward's book will not supply that want, the author, who is a well-known local Cheshire ornithologist, and who has already published an extremely valuable book on the fauna of that county, has evidently had but little practical experience of migration, and this book is merely a compilation

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\* *Migration of Birds*, by T. A. COWARD. 137 pp. Cambridge University Press. Price 1/-.

from *some* of the literature on the subject mingled with some very strong opinions of the writer.

Probably no one has had better opportunities of studying migration than the late Herr Gatke, who, living for 25 years or more on an ideal place of observation Heligoland, spent almost the whole of that time in observing and making notes. His great book, published in 1893, contained some new and startling facts, which were somewhat sceptically received by many ornithologists. Those, however, who have studied the subject in the field cannot but come to the conclusion that Gatke's theories, though possibly exaggerated, are in the main true. Not so, however, with our author who, from his arm-chair writes (p. 34):—"The absurdity of Gatke's arguments are proved by a study of his book." Further on, however, in his own book, Mr. Coward allows the truth of many of Gatke's arguments by granting that many species make long journeys without a break and also that the journey is undertaken at a great height.

Throughout the book lack of practical knowledge is shown; for instance, p. 36, where reference is made to Swallows migrating along the shore in a definite direction and keeping to a narrow line. Had Mr. Coward been out frequently he would have noted that, with a change of wind, these birds would at once have changed their direction, and that, therefore, this phenomenon, often observed in autumn, is in no sense a true migration. Apart from bad reasoning, the book contains many misstatements. On p. 63 Mr. Coward denies the existence of an E. to W. flight, making out that such a flight is merely a leeward drift on a N.E.-S.W. flight. Birds have been observed leaving the shores of the Continent flying due W. and arriving on our east coast from the E., and, if we mistake not, they were roughly timed by Mr. Cordeaux in communication with a Continental observer, but if this were not proof we have further definite evidence from ringed birds which have been marked in E. Germany and recovered in the West, but this paper written by Dr. Thienemann has evidently not reached the author as it is omitted in the curious list of papers called a 'Bibliography' which is found at the end of the book. Another bad misstatement is found on p. 68, where the large race of Wheatear

is said to winter in E. Africa, from which locality it has not yet we believe been recorded. Mr. Coward has some suggestive remarks to make concerning the air-currents at different altitudes and the possible drift of birds from Norway to France *viâ* the West of Ireland, but at present such notes are purely speculative.

We feel that the author has attempted a task beyond his powers, and that, as the book is cheap, too high a standard should not be expected, yet inaccuracy is dear at any price.

J. L. B.

#### PROTECTION OF BIRDS IN FRANCE.\*

We have recently had occasion to notice the appalling cruelty and destruction of birds in Italy, and it must be allowed that in France, where small birds of all kinds form no inconsiderable part of the menu, energetic steps for their protection were also needed. We are, therefore, delighted to welcome the advent of a Bird Protection Society in France which has just come into existence. It has been founded by the Société Nationale d'Acclimatation, but the greater part of the necessary work of bringing it to life has fallen on the shoulders of its 'Secrétaire adjoint,' Mon. A. Chappelier. Its President is Mon. Magaud D'Aubusson, a well-known French ornithologist, and as Vice-Presidents it has Mon. Menegaux of the Natural History Museum and Mon. L. Ternier, the Editor of the *Sport Illustré*. These gentlemen, though perhaps not generally known to English ornithologists, are well known across the Channel, and are a sufficient guarantee that this newly-formed 'Ligue' will work on scientific rather than on sentimental grounds. Their first Bulletin—which is apparently to be a monthly publication—has just come to hand, and contains an inaugural article by the President, outlining the policy which the Society intends to follow. Apart from general protection in regard to which the economic interests of the farmers will be carefully considered, the capture of birds on migration and the putting up of nesting-boxes will also be included; as well as attempts to stop the plume trade for millinery, and as a palliative for this the trimming of hats with the plumes of game and domestic birds is to be encouraged. Articles on

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\* *Bulletin de la Ligue française pour la protection des Oiseaux*. Cr. 8vo., 16pp.  
50 centimes. Paris: 33, Rue de Buffon.

nesting-boxes and the winter feeding of birds also form part of this Bulletin, as well as shorter notes relating to the destruction of birds at home and abroad. We heartily congratulate its founders on their very practical and common-sense intentions, which we hope they will succeed in successfully carrying out, and we are sure the 'Ligue française pour la protection des oiseaux' will have the very best wishes of all our members for a long and useful career.

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## PRACTICAL BIRD-KEEPING.

### XIV.—HOW TO BREED BIRDS.

By J. LEWIS BONHOTE.

At this time of the year the thoughts of all aviculturists are concentrated on "spring-cleaning" and the re-arrangement of their stock into their summer quarters, whether for breeding or otherwise. On looking through the back numbers of our Magazine one is struck by the fact that, amongst all our members, a comparatively very small proportion can in any way be termed successful breeders; of course the difficulties to be contended with are great, the majority of the birds kept are inhabitants of foreign and more genial climes, then natural food, and especially that with which the young should be nourished is unattainable in this country, and from lack of aviary room they cannot be given the quiet and freedom from molestation necessary to the successful rearing of their young. In spite of all these drawbacks, however, the list of successful breeders might be much greater than it really is, and I propose to give a few hints which may, I hope, assist in producing a greater measure of success. Two factors are indispensable to successful breeding (i) Condition, (ii) Stimuli, which, in other words, implies environment and attention to minute details.

Firstly, Condition. This is, of course, a *sine quâ non*, and unless it be in suitable 'condition' no bird can breed or should even be mated up for breeding. A secondary point to be borne in mind about 'condition' is the time of year at which a bird must be brought into breeding trim. In this respect many birds in confinement are late—not till June or July do they respond to

the influences (often the reverse of genial) of our Spring, and by July the year has turned, the moult commences and the opportunity of nesting for that year is lost. Of course we know that many broods are successfully reared in the latter part of the summer, but we are endeavouring to show that the measure of success might have been much greater had the stock come into 'condition' sooner. Those species that never breed owing to this cause largely outnumber those that do. Our first efforts, therefore, should be to get our stock into breeding condition as soon as possible, let us say by the end of April, and for this purpose at least two or three months preparation is necessary.

First of all, the sexes should be kept apart, where they can neither see nor hear each other. They should be kept in an aviary with inside and outside flight, in which they should be allowed to fly on fine and warm days; the inner aviary should, however, always be warm (not hot) especially at nights. They should not be allowed in the outer flight till towards mid-day, and shut up again before sunset. Actual cold, provided the weather be fine, will do them no harm for their few hours flight, but on raw days, especially if accompanied by rain and wind, they should only be allowed out for a very short time or not at all. The next important consideration is food: this should be abundant and nourishing, but of not too fatty a nature, as a fat bird will never breed; fresh green food, bath, grit, and other hygienic adjuncts should be carefully attended to, and the result of such a treatment, if conscientiously followed, will not fail to bring the birds into 'condition.' It is of course much easier to write about these matters than to carry them out successfully, the main stumbling block being the question of food, and as this article is not on any particular species it is impracticable to give any special menu.

The main facts to be aimed at, however, are fresh air, exercise, moderate warmth, good, but not fattening, food. I need hardly state here the signs of a bird being in good condition. Glossiness of plumage, brightness of eye, alertness, quarrelsomeness, restlessness, song, or frequent repetition of a call note, full development of any ornamental plumage, etc.; these are signs of 'condition,' and until a bird shows them no attempt should be made to bring the sexes together.

The mistake is often made of pairing the birds too soon, a procedure which defeats its own object. The male is usually ready before the female, and if they be paired as soon as the male is in 'condition' he exhausts himself in trying to persuade his mate to take on duties for which she has no inclination, and she, worried with his attentions, loses 'condition' rather than gains it.

We will now suppose that by the beginning of April both sexes are ready to breed, or nearly so, we still need not hurry, the longer the sexes are kept apart the more easily they will pair, and the middle of April is quite early enough to bring them together.

We must now turn to the important question of pairing and the second of our great factors '*stimuli*.'

If possible the hens should have been kept in the aviary in which they are to breed, and if, as often happens, it is necessary to have two or more species breeding in the same aviary, the hens should have been kept together during the early months of the year. If, however, it has not been practicable to keep the hens in their breeding quarters during the few months immediately preceding the nesting season they should have been moved into their nesting quarters at least a fortnight previous to the introduction of the males.

The number of hens kept should always be greater than the number of males, as they are more difficult to get into 'condition,' and since they play the chief part in the choosing of their mates there is more chance of any particular cock finding his 'affinity' if there are several hens on the look out for an 'eligible bachelor.' Animals and birds will generally mate up, even if they are not particularly attached to each other, if there be only one pair, but success is much more probable if they are allowed to choose their own mates. These small details may seem rather trivial, but it must be remembered that these notes are meant to apply chiefly to those species which seldom breed in confinement; with those that nest freely these methods are unnecessary, though, even in the case of free breeders, these hints would not be found useless.

We will now presume that our birds are in 'condition' and the hens in their breeding aviary, the next move is to introduce

the males. One or two moderate-sized cages should previously have been placed in the aviary, and, when the hens have got accustomed to these cages, the males should be put in, each one in a separate cage. All the males that are intended to breed in the aviary should be paired at the same time, and it will conduce to future peace if these males have already been living together. The best time to cage up the males is after dark or just before dusk. Owing to the birds taking fright and knocking themselves about it is often impossible to move them after dark, and it should then be done just before they go to roost; the main idea, however, is that they should remain quiet when first moved and wake up in their new quarters, by this means they will be far less disturbed by their change and no violent fighting is likely to take place. On the evening of the second or third day the doors should be opened and the birds allowed to find their way into the aviary in the morning.

If these instructions have been followed out there is not likely to be any serious trouble, but the aviary should be watched for the next day or two. The next step will be to remove the surplus hens, and this can be done as soon as it is seen which pairs have mated. This may take place almost immediately, or not for some days, but if the birds are really in condition it will not be long, and once that has been successfully accomplished the first step is completed.

Our attention must now be concentrated on the second great factor, that of *stimuli*, for a bird in breeding condition and mated will not necessarily breed, or at the most will only drop her eggs if the surroundings are not to her liking, and, in the case of some species, they will not even mate until they see the materials and locality for their future home at hand.

The first important point to consider under the head of 'stimuli' is the other inhabitants of the aviary. The ideal conditions is of course to give each pair an aviary to themselves, but when space does not admit of this arrangement a golden rule to remember is to place in the same aviary species which are *least* nearly related. During the nesting season—except in the case of those species which breed in colonies—a bird is always most pugnacious towards its own kind, or those of other nearly related species.

The size of the aviary is not so important an item as many seem to think; and, personally, I believe that more success is likely to be attained by keeping a pair to itself in a large cage than in an aviary with other birds; a fact I have proved to my own satisfaction over and over again, but if birds are to breed in a cage they must of course be in tip-top condition. The reason for this is fairly obvious: in an aviary they have so many outlets for their energy in flying about, fighting and searching for a suitable site, that much of the vigour that should be expended in breeding becomes dissipated in other directions, besides which the smaller (within limits) the cage or aviary the easier it becomes to give each bird individual attention and keep up his condition.

The next important point is quiet or seclusion. Many species will not nest unless they feel secure from their enemies, and, consequently, before the nesting season the breeding quarters should be thoroughly overhauled, and all mice, rats and especially cats, should be kept well away. There is nothing more disturbing to birds than the nightly patrolling of their premises by cats, and this of itself is quite sufficient to prevent many species from attempting to nest.

We must now consider the furnishing of the aviary, and as a preliminary should read up as much as possible of the birds' habits when wild and try to imitate them fairly closely. In most cases of course an exact replica is impossible, and, therefore, more success is likely to be obtained by studying the essentials rather than the details. For instance, with species that nest high up in trees the essential point is that the nest is placed well away from the ground, and a nest-box attached to the roof of the aviary is more likely to be appreciated than one lower down or on a tree. A Kingfisher that breeds in a hole in a bank overhanging water would take equally readily to a box on the wall provided it went in far enough from the entrance—the water would not be essential. Each nesting-place should be arranged so that it may be easily defended, and there should be very few perches near it, only just sufficient in fact for the needs of the nesting pair, for if other birds are able to settle near the nest it will probably be deserted or the young destroyed. For those species which nest



in thickets, several small thickets suspended if possible from the roof will be found more acceptable than one large one. In any case, far more nesting-sites should be provided than the number of pairs, and, further, the birds should be carefully watched so that if they appear to have decided on a spot unsuitable or unprovided with the necessary accommodation a nesting-site may then be fixed up in that spot. With those species that build open nests in bushes, several flat platforms of natural twigs may be fastened here and there, which may be used as a foundation. Nesting material of all kinds should be abundantly supplied, as well as plenty of that most artificial of substances cotton wool, for many species are very fond of this as it forms such excellent binding material and is at the same time soft and warm.

I cannot, in this very general article, enter on the question of food. The staple diet should of course be that which they have been having in order to bring them into 'condition,' but the nesting of backward or shy breeders may sometimes be brought about by giving them, in addition to this, the extra food which they will eventually require to rear the young; this need not of course be continued after they have commenced incubation, but in some cases it does undoubtedly induce them to make a start.

This, then, completes the rough summary of essentials mostly consisting of small details which, undoubtedly, go a long way towards bringing about success.

There is, however, one more point which may be mentioned, and that is the conduct of the aviculturist himself towards his charges. In breeding rare species, our object as aviculturists should be to add something to the general knowledge of the inner life history and habits of our pets. Many, and perhaps most, bird-keepers are so anxious to rear the young that they make few or no notes about them, and are content if at the end of the season they have doubled or trebled the number of any particular species, a result which might often be more easily obtained at less expense and trouble by a letter to some bird-dealer. Yet opportunities of studying duration of incubation, down plumage, methods of feeding have been allowed to slip by unnoticed. Personally, I have found that birds will not resent an inspec-

tion of their domestic affairs if done judiciously and by the right person. Strangers should, of course, never be allowed in the aviaries during the breeding season, and the fewer people that are taken to see the birds at that time, even outside the aviaries, the better. Birds, however, soon get to know their keepers provided they are usually dressed in much the same manner and take but little notice of them. Any inspection of the nests, etc. should be done as far as possible from the outside, and when nests are actually visited it should always be in broad daylight and if possible when the parents are off feeding. Close observation will soon give a hint as to when the birds are laying, and one or two visits will be sufficient to establish the exact date of the laying of the first few eggs, they may then be left entirely alone till they are nearly due to hatch, the exact date of which can then be usually determined by further close observation and one or two more visits and a note of the down plumage may be made at the same time. During the first week or so, after the young are hatched, they may generally be visited with impunity, and notes made on the early growth of the feathers, and, at the same time, one can see that they are being well and suitably fed; during the latter stages of feathering they should be left alone as otherwise they are certain to leave the nest too soon.

Such, then, are a few hints, which if followed should certainly increase the chances of success. The true bird-lover who knows and studies his charges will, of course, realise that these broad notes must be modified and adapted to suit the individual idiosyncrasies of every bird, for the lower animals have a great amount of individuality which is too often ignored by their keepers. Some of my readers may think the suggestions put forward trivial in many cases and involving a good deal of trouble; they have all, however, been founded on study, thought and experience, and what can be obtained without trouble is usually not worth obtaining. Of course, we cannot guarantee success, but those who follow these instructions will at all events deserve it, and even if they fail they will, if they be true bird-lovers, be practically recompensed by the interest awakened and knowledge gained from a closer study of their pets.

---

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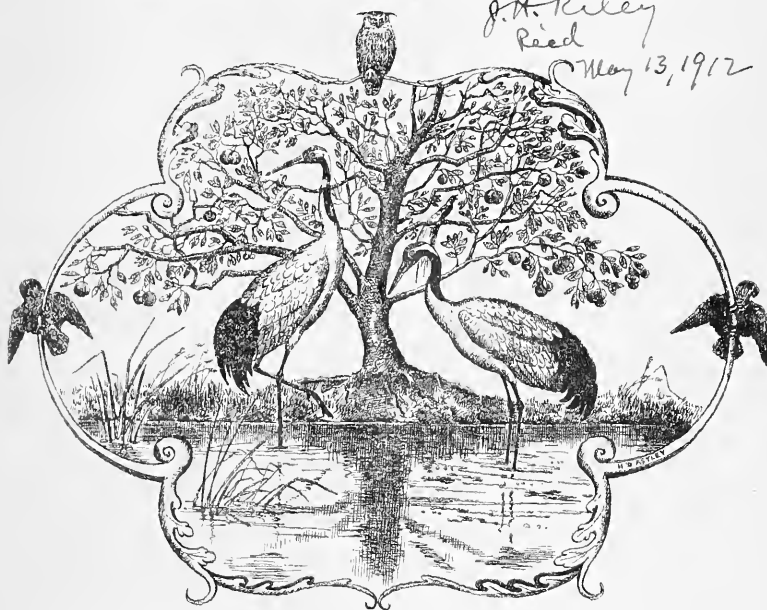
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Edited by J. LEWIS BONHOTE, M.A., F.L.S.

*J. H. Riley*  
*Reed*  
*May 13, 1912*



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# Avicultural Magazine,

BEING THE JOURNAL OF THE  
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MAY, 1912.

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## HUNSTEIN'S BIRD OF PARADISE.

By E. J. BROOK.

I obtained my Hunstein's close on five years ago from an importation brought over by Mr. Goodfellow for Mrs. Johnstone.

While these birds are amongst the most beautiful of the Paradise birds in the matter of colouring, I cannot say that they are particularly taking as aviary birds. The young Hunsteins are lively enough while in their immature plumage, but when they assume the adult feathering they become shy and sit like blocks while anyone is watching them, or else they hide away in any convenient bush. No doubt this is a provision of nature, and instinct tells them that while they are in grey plumage they are more or less inconspicuous and can move about freely, but when they are in full colour their best means of remaining unseen is to keep quite still and then their very colour is their safety, resembling as it does the light and shade on the branches and leaves of jungle growing beneath high timber. The shape of these birds, too, is a protection to them, for when they are sitting still, viewed from in front, they greatly resemble a heart-shaped leaf, and the tail wires resemble tendrils.

I think the males get their full colour when about three years old. I have not often seen the display owing to the shyness already mentioned, and I am not at all sure that I have ever seen the full display. The most I have seen is the expansion of the breast feathers sideways and upwards, as well as the raising of the small yellow cape like a halo or rough.

The Hunstein has a harsh rough grating voice, but he very rarely uses it. I think this species is rather impatient of change

of temperature, mine have done much better since I moved them to a compartment of my small bird-house, where the temperature is kept at a fairly steady 50°.

The diet is insectivorous and frugivorous, but they seem to prefer fruit, and would I think thrive on that alone, anyway for a long time.

---

## DIARY OF BIRDS SEEN ON THE WHITE NILE.

By RICHARD STAPLES-BROWNE.

### PART II.

(Continued from page 163.)

Feb. 10th. This morning we are again in a broad river, the Bahr el Jebel. Our progress through the cutting from the Bahr el Zeraf has been very difficult. The channel is intended chiefly for irrigation purposes, to prevent the damming back of too much water by the sudd, with consequent loss by evaporation. We were often aground in the shallows, on several occasions we took the wrong turning and found ourselves in a *cul-de-sac*, and our wheel was frequently clogged with sudd. The Bahr el Jebel, in which we now are, is the river which flows from the Albert Nyanza to Lake No, where, joining the Bahr el Ghazal, it forms the main stream of the White Nile, which we had left near Kio. The river is flanked on both sides by a perfect forest of Papyrus plants, large feathery tufts at the end of long green stems, like so many housemaid's mops. Some of these plants must have stood fifteen feet above the water. They extended as far as the eye can reach on either hand, and the view is consequently monotonous; in fact, the river flows through a desolate marsh at this point. Bird life here is rare. Practically the only birds I saw up to five p.m. were a few Black and White Kingfishers (*Ceryle rudis*), one or two Waders and some English chimney Swallows (*Hirundo rustica*); these Swallows were, however, present in large numbers. I looked in vain for the Egyptian Swallow (*Hirundo savignii*) with which I was familiar in lower Egypt. All appeared to be *H. rustica*. They were busily employed hawking the all too numerous insects, from which we had been suffering for some days past. At five p.m. we entered the lagoon on which the

government station of Shambé is situated. Here we passed several Hippopotami, some black Storks and some duck. At Shambé we landed and walked to a native village inhabited by the Dinka negroes. It was a great relief to be again on shore, as we had not left the boat since daybreak on the 7th, and were feeling rather cramped. The Dinkas are a less prepossessing people than the Shilluks. Their idea of clothing and ornamentation apparently consists almost entirely in whitening the body with wood ash. They possess, however, large herds of cattle, which form the principal part of their wealth. Some of these cattle had humps, others had not. Their most noticeable feature, however, was the splendid pair of horns borne by each beast. They were enormous and curved somewhat in the manner of those of Highland cattle. There were several varieties, and I see that Artin Pasha, in his recent book on the Soudan, states that he was informed that the herdsmen manipulate the horns when the beasts are young.

Feb. 11th. This morning we wooded at Kenissa and afterwards passed again through banks of Papyrus and Ambash reeds. Presently we came to a few trees, which are not too frequent on this part of the river, covered with parasitic creepers. Hippopotami are common here. We came across small parties of six, eight and ten together, and at one spot, where we turned a sharp corner, I counted no less than twenty in sight at once. Crocodiles were frequently seen. During the morning I saw several specimens of the Hammerhead Heron (*Scopus umbretta*). These birds were generally in pairs, though I also saw some small flocks of them. Bee-eaters of various species are very common here. This evening a Gecko appeared on board. I caught it and shut it up in my cabin in the hope that it may reduce the number of insects there.

Feb. 12th. We arrived early this morning at the Government station at Bor, where there is a rubber plantation. We left at 6 a.m., and three hours later arrived at Malek, a station of the Church Missionary Society. In the surrounding country are numerous large ant-heaps (Termites), which are used by the Dinkas as look-out places. The appearance of these people is extremely barbaric. In addition to those whitened with wood-

ash, such as I saw at Shambé, I also came across some who had coloured their bodies with a red clay. Some extremely gorgeous individuals appeared with red bodies and white faces, or *vice versâ*. We are now well to the South of the sudd, and the vegetation is becoming tropical. There are several Euphorbia trees near that part of the river through which we steamed this afternoon. I noticed several specimens of the Purple Heron (*Ardea purpurea*) and also some Goliath Herons (*Ardea goliath*). These and the Saddle-billed or Senegal Storks, which I saw further North, are perhaps the most striking birds I met with on the journey. In the evening we landed at Sheikh Tombé for wood. Here I saw several Agama lizards, having extremely rugose skins. The heads of these creatures were of a brilliant red colour. They seem to run to about nine inches in length. At this wood station are some fine examples of the African "Sausage tree," so-called from the resemblance of its fruit to the familiar breakfast dish. I was informed by a fellow-traveller that its leaves are used by the natives as a narcotic.

Feb. 13th. At ten a.m. we arrived at Mongalla, the chief Government station of the Southern Soudan. A garrison is situated here. There is also a hospital. We were met on the landing stage by a tame Zebra, a well-known character in the town, who appears to have a weakness for sugar. The Wellcome floating Bacteriological Laboratory was moored here. The Laboratory, which is most beautifully fitted up, is built on a raft, and a steamer similar to our own but not so large is attached to it. The doctors on board are at present investigating Sleeping sickness, which is spreading northwards from the great lakes. They most kindly showed me some very beautiful preparations of the Trypanosome, which is the cause of the disease, and which is conveyed by a species of Tsetsee fly. After leaving Mongalla the river becomes much wider. There are many islands, also shallows and sandbanks, on one of which we got stuck for some time. On the banks I noticed several banana trees. At five p.m. we reached Lado, formerly the headquarters of Emin Pasha. A sugar-loaf hill of great beauty, called Mount Lado, lies about four miles behind the town. This is the first hill we have sighted for several days. The atmosphere of Lado is hot, airless and steamy, and a large bush fire in the neighbourhood

did not improve matters. Among the huts I saw several Cape Doves (*Cena capensis*). These very beautiful birds were quite tame, and I could not help feeling how very desirable they would be in an aviary; they are of small size and exquisite colouring. Here again the English chimney Swallows were present in large numbers. We had hoped to arrive at Gondokoro to-night, but, owing to the presence of sand-banks and shallows, we were unable to do so. The stream is rapid and strong here, and it was necessary to have natives wading in front of the boat to find the channel. Often we had to wind ourselves up on our anchor as the only method of getting up stream. Finally, we tied up for the night, a few miles South of Lado.

Feb. 14th. We reached Gondokoro, the northernmost station of Uganda, at eight a.m., after dancing about from shore to sand-bank for some three hours or more. The place is prettily situated and well laid out. There are several palms about. The river here separates Uganda on the eastern bank from the Soudan on the western. In Gondokoro are many well-built brick houses belonging to Indian and other merchants, in one of which I was shown 150 fine Elephant tusks which had just arrived from the surrounding neighbourhood. Some hills are visible from here, and the atmosphere, though hot, is fresh, and there is a pleasant breeze blowing. The river from Gondokoro to Rejaf is picturesque. The channel is shallow and rocky, and there are several islands about. The stream is swift, and it took us five hours to steam the eleven miles between the two places. Several small streams flow into the river. They are very rocky and are suggestive of Scotch salmon rivers. Here I was lucky in seeing some specimens of the Stanley Crane (*Grus paradisea*). I understand this bird is seldom met with so far north, so this is probably the extreme limit of its range. The country round Rejaf is fairly well wooded, and there is a graceful hill at the back of the station. The place stands high and affords some good views over Uganda and the Lado Enclave. We remained here all night; the atmosphere was most refreshing after our journey through the sudd, and the only disturbing element was the occasional howl of a Hyæna.

(To be continued).

## MY EXPERIENCES IN AVICULTURE.

By the Hon. Mrs. BAMPFYLDE.

These experiences date from about two years ago, when I first seriously started keeping foreign birds in aviaries, and although I know there are many members of our Society far better qualified than I am to write on this subject, I will endeavour to give my experiences, such as they are.

At the present time I have two aviaries—one about 8ft. by 4ft. by 8ft. high; the other 10ft. by 5ft. by 10ft. high, the latter having an outer flight about the same dimensions, thickly planted with box, privet and other trees and shrubs and laid with turf. Both aviaries are built on to a south wall; the inner portions having cemented floors and several wooden tubs with evergreen shrubs planted in them for cover. These are constantly removed and replaced by new ones. There is a shallow cemented basin in the middle of each floor and also in the outer flight, which I find most valuable for bathing and drinking purposes. The water in these basins is changed twice a day.

Each aviary is covered in front with movable glass shutters, and is heated with hot water pipes. A small boiler, in which we burn cinders only, heats both aviaries and keeps them to a very even temperature of about 55 degrees Fahrenheit. I find that here, on the borders of wild and wet Exmoor, 700 feet above the sea, a certain amount of artificial heating is absolutely necessary during the winter. I have found that the dry cold affects my birds less than the constant wet weather, of which we get more than our share during the winter and spring. At the same time the intense heat of last summer was far more deadly to the birds than almost any winter.

There is a system of electric lighting in both aviaries to supplement the daylight in the winter mornings and evenings. This plan has been most successful, as it undoubtedly enables many of the smaller and more delicate birds to keep from hunger and thirst and so from weakness and eventual death. The winter before this there was no electric lighting, though all the other arrangements were exactly the same as they are now, and the loss then was infinitely greater than that of this winter, and this I attribute entirely to the want of light.



I should have mentioned that the smaller aviary is divided into three separate compartments, with wire doors from one to the other. This arrangement has been most useful for separating quarrelsome birds, and I have sometimes to breed individual pairs in these small compartments, but they have always been troubled with egg-binding, which presumably is owing to the lack of proper space and exercise.

Having given this short description of the aviaries, I will now try to give an account of their inmates.

In the larger aviary, with the outdoor flight, are to be found the following:—Gouldians (Black and Red-headed), Parrot Finches, Painted Finches, Bicheno Finches, Pintail Nonpareils, Cuban Finches, Long-tailed Grassfinches, an Australian Firefinch (cock), Violet-eared Waxbills, Blue-breasted Waxbills, Orange-breasted Waxbills, Cordon Bleus, Orange Cheeks, and one or two other small African Waxbills.

I should mention that the Violet Ears (a very fine pair) and the Firefinch are kept caged owing to their excessively quarrelsome dispositions. Last February the Violet Ears (being in a small compartment by themselves) started to nest. They laid at first four eggs, on which they sat steadily for a week, the cock bird taking his turn at sitting. Then they started to lay again in the same nest but the hen, unfortunately, became egg-bound. I was lucky enough to be able to save her, but, after that experience, caged them both, as I did not think it wise to let them continue nesting at that time of year, weakening themselves unnecessarily when there was practically no chance of rearing young birds. They laid six eggs altogether, and made the most wonderfully constructed nest of ivy leaves and pieces of the fir tree growing in a pot in their aviary. I had purposely given them no nesting material, as I did not wish to encourage nesting at that time of year. I shall hope to try them again this summer, and, perhaps, if enough live insect food is procurable, I may be fortunate enough to rear some young. Unluckily their almost murderous dispositions make it absolutely necessary to give them an aviary entirely to themselves.

With the Parrot Finches I hope to be more fortunate. I have eight at present, and there are certainly two, if not three

pairs among them. I started the winter with seventeen of these little birds and lost eight (nearly all from pneumonia, to which they seem very liable) within a short time of their arrival. Two pairs are now, to my regret, sitting, for I fear it is too early in the year to rear young birds successfully. Parrot Finches are the most delightful birds to keep in an aviary. Mine are very tame and will come and pick up mealworms at my feet, and, although they occasionally bicker among themselves, seem a happy and peaceful little people.

My Gouldian Finches have been a source of disappointment. I have tried for the last two years to breed them, but always without success. The old story of egg-binding has been the chief cause of failure. Twice young ones have been hatched here and lived for ten days, after which they were deserted by the old birds, which thereupon started to nest again. One pair are at the present time sitting, so once more are my hopes raised. These birds, having been once acclimatized, seem very easy to keep, though they are undoubtedly delicate when newly imported. Last summer I bought six Pintail Nonpareils (young birds out of colour), four of these died in a few days, although they had plenty of paddy rice and everything that seemed necessary to their well-being; however, their two survivors (a cock and a hen) are still with me and in full colour and in beautiful plumage. They seem exceptionally wild birds by nature, and up to the present have shown no signs of becoming tame like all the others. It may be of interest to mention that now they never touch paddy rice, on which they lived entirely when they first came here, but feed almost solely on spray millet.

Last November I purchased from Mr. Hamlyn eight Blue-breasted Waxbills and two pairs of Bichenos, of which all were newly-imported and out of which only one Blue-breasted Waxbill died. Neither of these two last mentioned varieties seem any trouble to keep in any way.

The Long-tailed Grassfinches have built innumerable nests, but have never yet got beyond sitting in them together side by side, though I am unable to tell whether they are a true pair.

In the smaller aviary there are the following:—Painted Finches, which I am hoping to nest successfully this summer, a

few more Gouldians and my soft-billed birds, which comprise Yellow-winged Sugar Birds, Blue Sugar Birds, Violet Tanagers and a Festive Tanager (cock).

The soft-billed birds I feed with the following mixture :— Condensed milk, Mellin's Food and a little honey mixed together in boiling water, with a little crumbled sponge cake added to it. They also get plenty of bananas and grapes and a few mealworms of which they are very fond. They are all delightfully tame, especially the Blue Sugar Birds, which invariably fly on to my shoulders and hands directly I enter their aviary, in the hope of receiving a mealworm or a grape.

Of all the birds, I have always found the soft-billed ones the easiest to keep in good health. They appear to feel the cold and damp less than most of the seed-eaters, and are always in beautiful plumage and condition, in fact I have not lost one during the whole winter.

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## ON THE BREEDING OF A HYBRID LORIKEET AND OTHER AVIARY NOTES.

By W. A. HARDING, M.A., F.L.S., F.Z.S.

Some years ago there remained in one of my aviaries—the survivors of a number of others—a fine male Swainson's Lorikeet and a hen Red-collared Lorikeet (*Trichoglossus rubritorques*). No sooner had death deprived this pair of their noisy companions and left them in sole possession of their abode than they began to busy themselves with one of the nesting-boxes provided for them. The box was not a particularly suitable one, and in order to encourage the hen by the provision of a more natural nesting place, a branch of a tree in my garden containing a Green Woodpecker's hole was taken down, cut to a suitable size and set up in the aviary. The cavity in the tree was some nine inches deep and the circular entrance at the top of it was three inches in diameter; the birds took to it at once, and after some time spent in trimming the interior to her satisfaction, the hen began to sit.

The first attempt at nesting was unfortunate, and the faint squeaking which announced the presence of a young one lasted

but two or three days. The next attempt, made later in the same year, was somewhat less unsuccessful; a fully-fledged young bird emerged from the Woodpecker's hole, but soon developed a tendency to fits, and died like its predecessor.

Matters improved, however, during the following year, when a healthy nestling was successfully reared, and this event was repeated for several years in succession. Two white eggs were always laid, but, as a rule, only one of them hatched out. Incubation lasted about twenty-one days, and the fully-fledged young bird did not leave the tree for several weeks. The hen sat very closely, and both parents screamed with the greatest resentment when their enclosure was entered during the nesting season.

The hybrid offspring bore a yellow band on the nape, flecked with red, and the red breast was without yellow feathers at the sides; for the rest, it generally resembled its 'Blue Mountain' parent who, sad to say, died full of years and honours a few days ago.

These birds occupied one of a block of four aviaries, each compartment consisting of a house six feet square, opening on to a flight twelve feet long and six feet wide and partly covered by glass. The exterior treatment of the block was suggested by one of the picturesque cabmen's shelters, many of which may be seen in various parts of London, and the woodwork of the flight was so arranged that a roll of wire-netting, six feet wide, could be fitted to it with the minimum amount of cutting.

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Ever since I first read Waterton's stirring description of the tolling of the "Campanero" in the forests of Guiana I had desired to possess one of these birds, and accordingly it was a particular pleasure when I received one day from Mr. Jamrach a fine male specimen of the Naked-throated Bell Bird (*Chasmorhynchus nudicollis*, a pure white bird about the size of a Starling, with a wide mouth and a somewhat evil expression. For some days he had been silent in his new surroundings when, one morning, I seemed to hear the village blacksmith exercising his calling with extraordinary energy and clangour. For a time I was really puzzled and deceived, and then remembering the new-

comer, approached him unseen and realised what was taking place. The bird opened his mouth extremely wide, swelled out his throat and, with a convulsion which shook his whole body, emitted a high-pitched, metallic cry, far more piercing than the screams of my Macaws, distinctly heard, as I afterwards ascertained, nearly half-a-mile off. This cry was scarcely bell-like, but bore a remarkable resemblance to the clanging of a hammer on an anvil, and was repeated at short intervals in the early mornings during the ensuing spring and summer. The voice of this bird, with its tale of tropical forests, was as music in my ears, but my neighbours took a less romantic view and heartily welcomed its untimely demise.

Bell Birds are certainly unsuitable for any but a country aviary, but they are interesting and remarkable forms, and I hope some day to come across Waterton's species (*C. niveus*) with the long pendent caruncle, usually erroneously depicted as carried erect, or the still more curious three carunculated species from Central America.

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My Waders' aviary is some 34 ft. long and 24 ft. wide, and sufficiently high to enclose an apple tree and a number of shrubs. A shallow concrete tray of water occupies the middle. The water is a foot deep at one end, where it may be run off through an ordinary bath plug let into the cement, and it runs out to less than an inch deep at the other extremity. This trough has no raised edges but slopes up almost imperceptibly into the surrounding sand, beyond which is some rough turf, renewed every year. The trough is often allowed to overflow and reduce its banks to a sloppy condition so that the Waders may easily plunge their beaks therein in search of food.

The staple diet supplied to the Waders consists of fish cuttings minced in a machine, added to an equal quantity of a mixture of half bread and half meal (usually pollard), the whole being stirred to a soft paste with water. On this preparation such birds as Godwits, Knots, Curlew, Oyster Catchers and Red-shanks seem to thrive very well. Two years ago I introduced half-a-dozen Black-headed Gulls into this enclosure, and they soon began to rule the roost and proceeded to steal the eggs of

some Martinican Doves (*Zenaida aurita*) which had nested for several seasons in a dove-cot fitted up for them near the roof. It is always difficult to maintain a friendly equilibrium among a diverse assortment of birds confined in the same aviary, and I was about to restore peace by removing the Gulls when, last Spring, two couples paired off.

Several nests were made and discarded, and much screaming and quarrelling went on before the two hens finally settled down and proceeded each to lay three eggs. At first the hens were much disturbed by the other birds constantly running before and behind them; some Moorhens, which had multiplied exceedingly in the enclosure, being particularly tiresome in this respect. A semi-circular sheet of corrugated iron placed round the back of the nest did much to abolish this difficulty, and the cock bird, in each case, kept continuous guard in front, spending his days in screaming at intruders and driving them off. When, as occasionally happened, some wily bird escaped his vigilance and the hen joined in the chase, it was his first care to drive her back gently to the nest and stand by until she was sufficiently reassured to settle down again upon her eggs. The shell of these eggs is very hard and the inner membrane extremely tough, and fully two days elapsed between the first chipping of the shell and the final emergence of the chick. The mother, in both cases, was too much occupied by her first two nestlings to trouble further about the third egg, which having been laid last took longer to incubate. The nestlings were covered with yellow down spotted with black, and the two which have survived are now with difficulty distinguished from their parents.

It was in this Waders' aviary that I once kept half-a-dozen Penguins imported by Mr. Hamlyn. At first they refused to feed themselves, and their tightly-closed beaks had to be forced open whilst pieces of fish were pushed down their throats. This was a somewhat serious operation, involving the efforts of two persons and unpleasant for all the parties concerned; the beaks of these powerful birds were as sharp as razors, and one's hands were not infrequently cut even when protected by gloves. A bite was apt to end in blood poisoning, due possibly to a want of freshness in some of the fish used, and on one occasion my assistant suffered

somewhat seriously from the result of such a wound. The birds, however, soon learnt to feed themselves and became very tame, running after me when I appeared with food, or jumping into their trough and swimming about with extraordinary dexterity and grace in anticipation of a scramble for the fish about to be thrown into the water. They never would feed themselves upon anything but whole fish, and herrings were the only things acceptable to them in size which I could get in any quantity. So long as the fresh herring supply lasted—for the best part of a year—all went well, but there came a time when no more could be obtained. Recourse had to be made once again to broken fish and forced feeding, and sickness and death soon followed, apparently as the result of some digestive trouble. To those who can ensure a constant supply of the proper food no more delightful and amusing creatures can be recommended than Penguins.

There is in my garden a piece of open water enclosing a well-wooded island, and here live a number of Ducks, Swans, Flamingoes and Gulls. Two years ago my Herring Gulls made a nest on the ground during my absence from home, and my gardener, in an excess of zeal, removed the two eggs in order to preserve them for my collection. Last season, another nest with three eggs was discovered, and all went well until a rat or weasel put an end to my hopes. There seems to be no great difficulty in breeding gulls. A sufficient number of individuals to insure the presence of one or more pairs, plenty of room and absence of vermin seem to be the essential requirements for success.

Regarding Flamingoes I can only confirm the observations of others. It is surprising that such ornamental and hardy creatures are not more frequently seen. Given shallow water and the soft muddy bottom essential to the welfare of their feet they are as easy to keep as Swans. Mine thrive well on maize alone and feed principally after sundown, when they may be heard grunting and quarrelling over their trough of food. In hard frosts care has to be taken lest their slender legs are injured by ice, and on such occasions Swans are invaluable ice-breakers, and generally maintain a piece of open water where all may huddle together.

Peacocks out of plumage are not renowned for courage,

but what his hair was to Samson so is their spread tail to these birds. On one occasion, a Peacock in full feather followed me on my morning visit to the aforesaid island and, seeing a white Swan sitting on her nest, was filled with the spirit of war. Retiring to a distance he spread his tail, flapped his wings and half ran, half sailed, with ever-increasing momentum, plump at the sitting bird. The Swan rose up hissing and dangerous, and I expected the worst consequences for her adversary. The latter, however, retired in good order and once more, from a distance, recommenced the charge. But the Swan could not face the shock a second time and, flying precipitately, left the Peacock preening himself in proud possession of the eggs.

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Of various Parrots I have kept, perhaps Bouquet's Amazon is the rarest. During a visit to the West Indies some years ago I visited Dominica, and found a pair of these Amazons in a gin shop in Roseau. After an animated discussion with the drunken proprietor I obtained the birds for thirty shillings, and, fearing he might repent of his bargain, hurried off with one in each hand, and spent the rest of the day in improvising a cage. Of the other Parrot peculiar to Dominica I saw nothing. The August Amazon inhabits the virgin forests which clothe the most inaccessible parts of this mountainous island. It is known to the natives by the strange name of "Cicero," and it is said that not more than two individuals of this rare species are usually seen at a time.

*Chrysotis bouqueti*, on the other hand, is gregarious and a much commoner bird, inhabiting less unapproachable places. Its local name is "Jacko." I was about to visit a plantation in the district where it is found when an attack of fever cut short my visit to the Island. As Canon Dutton noted some time ago in these pages, Bouquet's Amazon is not a talker and, considered as a pet, is a handsome but stupid bird.

On two occasions Mr. Cross has sent me a hen Grey Parrot, which has subsequently deposited two white eggs in her cage. The last of these hens I still possess, and occasionally she plays at nest-making, persistently pecking at the bottom of her cage and, with one leg, vigorously kicking imaginary fragments of



wood out of her imaginary hollow tree. I have made one ineffectual attempt to induce this bird to pair off and propose to repeat the experiment again. A little Red-collared Amazon (*C. collaria*) I bought in Jamaica was able to say a word or two and made an affectionate pet. The narration of its tragic fate shall conclude these somewhat disjointed notes from an aviary.

In addition to birds, I keep certain wild mammals and snakes, and in a heated out-house where the snakes lived were placed one winter the Jamaican Amazon and a Grey Parrot. Meanwhile a slender Python, scarcely four feet long, escaped from its case and crept beneath a pile of heavy boxes, and as the house was to be cleaned out within a week I postponed until then any effort to recover so apparently harmless a creature. But next day the Grey Parrot was found dead in its cage, and so, a day or two later, was my little *collaria*. The latter obviously had been constricted and an ineffectual attempt had been made to swallow him. The wings had proved to be too large a morsel for the Python who, had he succeeded in engulfing his victim, would have been caught in a trap, for he would have been far too stout to crawl back through the cage bars with the bird inside him. The Grey Parrot was found to have suffered from a diseased heart, but I always think her death was accelerated by shock at the sight of the snake.

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## THE BLUE CHAFFINCH OF TENERIFFE.

*Fringilla teydea.*

By HUBERT D. ASTLEY.

In February, when staying near Puerto Orotava, I paid a call on Senor Ramon Gomez, the chemist, and found that he had half-a-dozen living specimens of the Teydean Chaffinch, which he told me he had caught as young birds two summers ago amongst the Pine Forests of the Island, in the neighbourhood of the famous Peak of Teneriffe [El Teide], and I carried back two pairs.

It is supposed that this species is only to be found on Teneriffe, and in limited, as well as decreasing, numbers in the

forests of the beautiful Canary Pine, always at a high altitude, so that their habitat is a very confined one. I was told, however, that this same Chaffinch is supposed to have been discovered on the neighbouring island of Fuerteventura, but for the truth of this I cannot be sure. If the bird is confined to one small island in the whole world, it certainly must become extinct before long, especially when naturalists are more and more interested in procuring skins.

Mr. Meade-Waldo knows as much as anyone about the Blue Chaffinch, and has contributed more than one note in the *Ibis*. For instance, in the Vol. for 1893, p. 193, he wrote :—

“This beautiful Chaffinch, I am glad to say, appears to hold its own in all the pine forests of Teneriffe, and in one district seems to increase, owing, I believe, to a war waged against the Sparrow-hawks that breed there and evidently feed on the poor ‘Azules.’

“They are the tamest birds imaginable; when we were camped in the pine-forests they would come into our tent to feed, and would anxiously wait for us to liberate from our fingers a butterfly that had been captured. Though feeding on pine-seeds they do equally well without in confinement, but appear to want a great deal of insect food. They seem perfectly hardy, a fine old cock in our aviary having been out all through the winters of 1891 and 1892. The nest is built at the end of June, and two eggs only are laid,”

This Chaffinch is a good size larger than the English one, the male being of a rich grey blue all over, with a narrow line of white just over and under the eyes. The female is, roughly speaking, greenish, a kind of dull brown green, but in the breeding season she has a bluish tinge.

These birds have a loud chirp, somewhat Sparrow-like, but sharper and more shrill, whilst the song bears a family resemblance to that of the European Chaffinch.

I was told in Teneriffe that an Austrian naturalist had not long ago been shooting a great many—worse luck! and that some of the inhabitants are realizing that the skins are sought after by European collectors.

The birds of the Canary Islands are interesting, because

several of the islands have species or varieties peculiar to them. On Palma, for instance, there is a Blue Chaffinch, but it differs from *F. teydea* (Senor Gomez is my authority) in having two bars of white across the wings, being much more distinct than those in *F. teydea*, which are merely of a lighter shade than the rest of the general colour. It is supposed that the Canary Islands may be the remnant of the great lost Continent of Atlantis; at any rate it is evident that the Blue Chaffinch is only to be found there—and *perhaps* only on one island of the group.

The males are strikingly handsome, their colour is somewhat the same as that of the Blue Rock Thrush, but it is richer and more uniform throughout. In shape and demeanour this bird is a true Chaffinch.

It would be very interesting if my Chaffinches would breed in captivity, and I shall encourage them to do so.

Nine of these birds were imported in July of 1893, which were purchased by the authorities of the Breslau Zoological Gardens, one pair of which paired off in a large cage. The hen built her nest in a bushy branch within an open nest-box. The nest consisted of hay, moss, charpie and feathers. The male bird fed her all the time.

The period of incubation was 14 days, and the young were fed by the hen with fresh ants' eggs and mealworms.

Several broods were successfully hatched.

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## BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

The pair of Black-necked Swans on the Three-island pond have hatched a pair of cygnets, which are up to the present doing well. It is most interesting to see the parents brooding them on their backs, the cygnets hiding away completely under the old birds' wings. One of the photographs here reproduced, shows a back view of the male Swan, and under one wing can be seen the cygnets comfortably tucked away. The male Swan has been rather savage all the winter, but latterly has become extremely so, rushing open-mouthed across the water at any

person within the enclosure; but he rarely attacked his companions the ducks, although he showed distinct animosity towards any bird that had much white about it. A pair of Rajah Sheldrakes had to be removed for this reason.

When I first took up my duties at the Gardens the old male Black-necked Swan had been kept for some time in one of the small duck paddocks, where he spent most of his time waddling up and down the gravel path endeavouring to fight with some Whooper Swans in the next inclosure. I found that he had developed large warts on the base of his feet, which made him quite lame. He was, therefore, removed to the pond at the rear of the Fellows Pavilion, where he made advances towards a female black Swan. Soon, however, I was able to procure a mate for him of his own species, but I did not dare to put the pair on the Three-island pond in case they should persecute the defenceless Flamingoes.

As soon as the new pond at the Western end of the Gardens was completed however, the Flamingoes were removed thither and the Swans placed on the Three-island pond. Last spring they nested but without result, the eggs proving addled. This year they made a large nest on one of the islands, the hen laying four eggs, two of which hatched after six weeks incubation. These are the first young birds of this species to be hatched at the Zoo. since 1879.

The old dilapidated aviary near the Apes' House has been entirely rebuilt and formed into a six-compartment aviary, which will be known as the "Summer Aviary." Each compartment has a small pond and a shelter shed, and the whole is covered with wire-netting of five-eighths inch mesh, so that the smallest birds can be kept. It is the best aviary we have had for breeding, since it is so arranged that the birds can be fed and watered without being in the least disturbed, and we hope to have considerable success in the coming breeding season.

Of recent arrivals the most noteworthy are contained in a small collection of birds from Colombia, presented by Mr. W. K. Pomeroy, containing a very fine young Harpy Eagle, a pair of very rare Purple Jays (*Cyanocorax affinis*), two Golden Hang-



BLACK-NECKED SWAN (*Cygnus melanocoryphus*) AND YOUNG.



nests (*Icterus xanthornus*) and two Severe Macaws (*Ara severa*), as well as a good many less important birds.

Two adult Lammergeiers or Bearded Vultures have been acquired by purchase, and make a fine addition to our series of raptorial birds, as it is some years since the Society has possessed an *adult* specimen of this fine species.

Besides the young Swans we have three young Chestnut-breasted Teal, one of the rarer of the smaller Waterfowl, and three young Peacock Pheasants. D. S-S.

## CORRESPONDENCE, NOTES, ETC.

### NOTES ON A HERRING GULL.

SIR,—When passing the Gull's aviary at the Zoological Gardens the other day I observed a Herring Gull behave in a manner which I think must be most unusual.

It arose from the ground whilst in a sitting position, and when it alighted dropped upon its breast. This was repeated twice, and although I examined the bird very closely during flight, I could see no trace of legs; in fact, I came to the conclusion that it was a trapped specimen and had suffered amputation.

I was feeling very sorry for the bird and was wondering how it managed to exist amongst its bullying brethren when it suddenly got up *and ran away*. Had it been the first of April I could have understood matters better than I do now. W. S. BERRIDGE, F.Z.S.

### THE BREEDING OF KNOTS.

SIR,—I have often wondered why the Knot (*Tringa canutus*) never breeds in captivity, and I should be interested to learn if any members of the Society who have kept these birds have ever noticed any signs of nesting.

Even allowing for the fact that in the extreme north where these birds naturally nest, the conditions are very different, yet one would have thought that birds that do so well in confinement (personally I have found them almost "impossible to kill") and yearly put on a sort of breeding plumage, would, in exceptional cases at any rate, have nested.

I wonder if any member of the Society has ever seriously tried to get them to nest by putting a few birds in a suitable place, apart from birds of other species, and if so, with what result?

My attention was drawn to the matter to-day, by noticing a Knot (a bird I have had some years and that has assumed its chestnut breast rather earlier than usual this spring) busy, near the edge of water, throwing bits of dried grass and other small bits of herbage from one side to another and backwards over its shoulder.

There was, I feel sure, no mistake about the meaning of the action being a remote suggestion of nesting. I do not for a moment suppose that in my crowded aviary any nesting will result, but I think the action is interesting as showing that possibly a slight change of conditions might result in actual nesting. I have noticed a movement similar to the Knots in a Reeve that actually nested and laid—also in many other birds, but always in the spring and connected with nesting operations.

I am quite convinced that the Knot's movements had nothing to do with food search.

Is it too much to hope that if trials were made on a wide scale, some day nesting would result? C. BARNBY SMITH.

[The only approach to the nesting of this species took place in the late Lord Lilford's Aviaries in 1893 and is noted in Prof. Newton's 'Ootheca,' Vol. II., p. 207. Perhaps Mr. Cosgrave may be able to give us some particulars as to the food and conditions under which these birds were kept during that year. Of late years much has been discovered about the nesting habits of this species. Mr. Manniche, a Danish ornithologist, gives a good account of their breeding habits, etc., in his book, "Meddelelser om Grönland," p. 130. He remarks that at this time of the year they are largely, if not entirely, vegetable feeders, eating seeds of *Carex* and *Luzula* Tufts. The breeding grounds were dry, stony, sparsely covered table lands. Other observers have noted their feeding on the shoots of *Saxifraga oppositifolia* and the nests found have been well concealed among rough stones and boulders.—ED.]

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#### RANDOM NOTES.

SIR,—I am sending you the following notes about my birds, but I am afraid there is nothing to interest your readers as I am very much of an amateur, and have only a large box-cage for my birds, and I have nothing rare. My cage measures 27 inches long by 13½ inches, and is 18 inches high. At present it has fifteen occupants, consisting of two Silverbills, two Cordon Bleus, two Lavender Finches, two Orange Cheeks, two Zebra Waxbills, two Cuban Finches, one Red Avadavat (cock) and one Firefinch (cock).

The only point of interest is that I have been very lucky with my birds. The Cordon Bleus are my first and original pair, purchased three years ago. One Lavender Finch is also my original one, purchased about



the same time, also the Fire-finch cock. They are all in beautiful plumage, never a feather out of place. When I read of members buying several pairs of Cordons and Lavenders before they can get a pair to live, I feel very pleased with myself.

The cage has two small wooden nest-boxes hung on the back wall a little way from the roof, and the birds sit on the top of these boxes for hours at a time in preference to the perches. Some sleep in them at night, and the Cordons often use them in the day-time, and sit side by side with their heads peeping out. I have a branch of an apple tree tied to a long perch running the full length of the cage, and they enjoy all the small twigs, which make a nice change from ordinary perches for their small feet.

I feed them on Canary seed, white millet, spray, maw-seed, a little Spratts' egg-food in winter. They eat a large quantity of grass in the ear when we are in the country in summer. They live in a nice sunny school-room with a western aspect. The first year I had them the Cordon hen laid a few eggs, but since then they have shown no signs of mating, and the cock has never sung his love-song with a piece of grass in his beak. The Fire-finch hen also laid some eggs and died, and I have not replaced her.

BARBARA YOUNGER.

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## REVIEWS.

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### BIRDS OF COLORADO.\*

The United States covers such a vast territory, that in spite of the activity of the numerous excellent ornithologists in that part of the world, there is much to be discovered relating to the distribution and habits of its bird fauna. As a contribution to this subject, the volume before us by Mr. Sclater will admirably fulfil its purpose. The names, both trivial and scientific, are taken from the third edition of the A.O.U. Check List and much valuable space too often devoted to synonymy has thus been saved. Under each species we find the following heads: (1) References to Colorado records, (2) Full description, chiefly of the adult male, and we feel that a little more space might have been devoted to the fuller description of the plumages of the females and young. Mr. Sclater implies in his introduction that

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\* *Birds of Colorado* by WILLIAM LUTLEY SCLATER. 8vo. 576 pp. 16 photographs and 1 map.  
London: Witherby & Co. 21/- net.

one of the objects of the book would be to enable the tyro to identify the birds, and it is just the absence of reliable descriptions of these lesser known plumages which often renders identification of any particular bird a matter of difficulty to the beginner.

Under the third heading is given the Distribution both in the States, and, in greater detail, in Colorado itself.

The last heading deals with habits, both in and out of the breeding season, site of nest, colour of eggs, etc. We have, therefore, on the whole, a very complete account of the birds of the country. At the end is given a long bibliography of papers on Colorado birds and a geographical index or "Gazetteer." Mr. Sclater has given us a thoroughly good book, to which he has obviously devoted much careful work, and which should be for many years to come the authority on the birds of that region. We have only one small criticism to offer, and that is that the measurements are given in inches instead of millimeters, which, especially in small measurements, is a much more convenient unit.

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#### THE GIZA ZOOLOGICAL GARDENS.\*

The Report for the year 1911, on the progress of this institution is to hand, and contains some very interesting statistics which show considerable progress. The largest stock of animals kept there at any time was maintained in 1911, and there were only 295 deaths as compared with 380 in the previous year. The number of birds at stock-taking was 988 as compared with 842 in the previous year.

One is apt to regard the climate of Egypt as ideal for a Zoological Garden, but Captain Flower's Report opens one's eyes to the fact that adverse conditions, of which we know nothing here in England, sometimes prevail there to the detriment of the live stock. For instance, during the year four very severe wind storms, sand storms and dust storms occurred, while earthquake shocks were felt in August. Fortunately no material damage was done.

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\* Zoological Gardens, Giza; Report for the year 1911, by the Director.  
Cairo: National Printing Department.

The London house cat is troublesome enough here, but the authorities at Giza have a much more formidable foe in the wild Jungle Cat, (*Felis chaus*), a powerful animal which, during the year carried off quite a number of birds, not to mention four young goats. Hence it is not surprising perhaps to find that the list of mammals bred in the Gardens is much longer than the list of young birds reared. The latter indeed only contains two Black-cheeked Lovebirds, one Java Sparrow and several Turtle Doves of sorts, though several others were hatched, notably two Senegal Stone Curlews and two Buff-backed Herons.

The Report is illustrated with several excellent photographs.  
D. S-S.

#### REVUE FRANCAISE D'ORNITHOLOGIE.\*

5

It is impossible in the space at our disposal to mention in full the numerous interesting notes and articles in the three numbers of this journal under review.

There can be no doubt that French ornithologists are beginning to bestir themselves and we may soon hope to have more precise knowledge of the birds to be found in their country. Dr. Delmas concludes his Catalogue of the Birds of l'Aveyron, and M. Babin gives a list of the Birds of the Canton de Nemours, while other notes dealing with the native fauna include an article by M. de Dumas on the food of the Honey Buzzard, and migration notes on Swallows, Martins and Cross-bills. The French Colonies are represented by articles on Tunisian birds and on the Tailor Bird (with black and white plate) from Cochin China. Two articles deal more especially with Aviculture, one on an Ostrich farm in Madagascar and the other on the breeding of Egrets in the Jardin des Plantes. We heartily recommend this Journal to British Ornithologists who will find in it many valuable notes about the birds in which they are most interested.

\* *Revue Française d'Ornithologie*. Monthly—January, February, April.  
Paris: 25, Quai Voltaire, 10 francs yearly. 85 cents per month.

UPPINGHAM SCHOOL NATURAL SCIENCE  
REPORT.

We have been favoured with a copy of the Uppingham School Natural Science Report, and are pleased to notice that the interest in Natural History is well maintained. The present pamphlet contains notes and observations on the vertebrates met with during the year. 1911 does not seem to have been particularly noteworthy in the way of rarities observed, but the short notes on the commoner species are not without their interest. We learn, for instance, that the Whitethroat was much scarcer than usual and that although the usual numbers of adult Cuckoos were seen very few young appear to have been reared. Perhaps the most important note from the scientific point of view is that of the Little Owl, which is now common in the district. The contents of nesting holes and pellets were carefully examined, and its chief food seemed to consist of beetles, insects and mice, with very few small birds, Tits, Wrens, occasionally a young Thrush, and one water rat. No remains of game birds whatever were found. Mr. Constable, however, noticed a growing scarcity of small birds, which he considers may be partly due to the Little Owl, disturbing the birds and causing them to seek "fresh fields and pastures new."

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## PRACTICAL BIRD-KEEPING.

### XV.—LARKS.

By DR. A. G. BUTLER.

Our Editor has asked me to contribute an article upon these birds although my experience of them is limited to three species:—the Skylark, Woodlark, and Mongolian Lark, other more competent members of our Society not having been willing to help him. He says:—"to have kept one species and studied it is better than to have had fifty and just fed them in a cage." Of course this is true, and, therefore, I am doing what I can towards helping those with even less experience.

The Larks are related to the Finches and Pipits but differ from all their relatives in having the back of the tarsus scaled as well as the front. The form of the bill in the various genera differs to an extraordinary degree, being slender, as that of a Warbler in some; long and tapering with a slight terminal curve (so as almost to recall the Hoopoes) in *Certhilauda*; broad, short and notched like that of some Buntings in others. Unlike the Finches, the bills of Larks do not seem to afford good sexual distinctions, but as a general rule the males may be distinguished from the females by their superior size, broader chests and noticeably longer wings (see my little book "How to sex Cage-Birds," p. 92); the hind claw is also said to be longer in the males than in the females, but I have hitherto had no opportunity of confirming the statement.

Being related to the Finches and Pipits, the Larks naturally feed both upon seeds and insects, and therefore should have both in captivity. A good insectivorous mixture, a tea-spoonful of canary-seed and two or three mealworms, smooth caterpillars, or spiders daily, constitute the most suitable diet for caged Larks; a fresh clovery turf, a little groundsel, chickweed, or chopped lettuce should also be given when obtainable.

As these birds do not wash, but dust themselves after the manner of fowls, they should have abundance of fine fresh sand, in which to perform their cleansing operations. Being subject in their natural state to showers, it does not hurt them to occasion-

ally sprinkle them with a fine syringe; but as they are unable, unless kept in a spacious aviary, to get sufficient exercise to dry them rapidly and restore them to their normal temperature, it is not advisable to overdo that sort of thing; and the safer plan, in my opinion, is to abstain from the practice altogether.

Unless you possess both sexes of a species and desire to breed from them, Larks are far better kept in cages than aviaries; in the former they not only sing much more frequently, but they can be better attended to. The cage should not, as a rule, be lofty; and, for recently acquired birds, which are nervous and liable to spring recklessly upwards at the risk of concussion or a broken skull, the roof should be of canvas; for well-established birds however this is unnecessary, and then it may either be of wire or wicker-work, the latter being preferable. For the common Skylark I found the ordinary runner-cage, two feet in length, about seven inches in width and nine in height, with a central door, most suitable: I used to turf one end, thickly sand the other, hang food and water on the front and put a small pan of canary-seed inside.

The Chinese cage for thick-billed Larks is circular with a central one-legged table upon which the bird mounts to sing: the only objection to this cage is that it is not large enough to give the inmate much exercise: I therefore got the late Mr. Abrahams to have a special cage constructed for my Mongolian Lark; it was of the waggon pattern, with overarched willow bars and a sufficient depth of wood to enable me to cover the floor with abundance of sand; the back and ends were of wood and the length of the cage two feet: a movable slip in front admitted a scraper for cleansing the floor, and the sand was poured in through the top bars: food and water pans slid in from the front at either end just above the sand: this bird lived in perfect health to a good age.

Larks roost at night upon the ground, so that whether in cage or aviary they should not be subjected to possible attacks by either rats or old buck mice (the latter are often equally dangerous). Rat or mouse-virus, when it can be obtained in good condition, is most effective; but I am afraid, now that it has made a name for itself, it is by no means so satisfactory as when

first placed upon the market: in 1911 I sent for two tubes of mouse virus and a phial of Rattine and although I carefully prepared them according to instructions, not a mouse was destroyed by any of them: in 1910 one tube of mouse-virus cleared off every mouse on my premises.

Unlike most birds, Larks appear to sing instinctively: that is to say, instead of learning from their parents, the wild song appears to be hereditary. I have taken Skylarks from the nest when six days old and hand-reared them, and one of these, though a hen, sang the well-known song of its species; others taken when fairly well feathered not only produced their own natural song, but introduced into the performance parts of the songs of other birds in my possession.

My first attempts at handrearing Larks were not successful, the whole of them having died from cramp, although kept warm in a basket of hay and covered with flannel at night. Considering that in their wild state birds would be crouching together in a nest placed in a hollow or depression in the earth, I concluded that moist warmth to the legs was necessary in their infant stage; I therefore cut a hole in a thick turf and inserted therein a Whitethroat's nest, in which I placed my nestling Larks, covering them with a piece of flannel to represent the mother-bird: from that time forward I had no further difficulty in rearing Skylarks.

I have had no experience in breeding Larks, and for that reason I should have been better pleased if our friend, Mr. Reginald Phillipps, would have consented to undertake this article. I should imagine that, at first, these birds would require a considerable amount of living insect-food for their young; a point upon which, I think, Mr. Phillipps, does not speak definitely in his account of the nesting of the Black Lark. Soiled hay seems to have been preferred for the nest; not I should imagine to render the latter less conspicuous, but because it would be easier to mould than when fresh and stiff.

Many years experience in bird-nesting convinced me that birds selected such suitable materials as were nearest to hand, without considering whether the use of these would render their homes conspicuous or the reverse: the only Chaffinch nest which

I ever found completely covered outside with grey-white lichen was placed in an elm-hedge skirting a wood and was so glaringly conspicuous that no passer by could possibly fail to notice it: the lichen had been obtained from a tree a few feet behind in the wood. This is not an isolated instance; the nest of the Long-tailed Tit is frequently a prominent object in a roadside hedge, and consequently tempts the young clodhopper to exhibit his destructive instincts.

In the foregoing observations I have dealt chiefly with those Larks which spend a considerable part of their existence upon the earth or near it, but there are others, such as the Wood-lark, which often settle upon the tops of hedges or the branches of trees, and for these it is necessary to provide loftier cages supplied with perches for their use during the daytime: at night, like other larks they rest upon the ground. Even a Skylark can settle upon a branch, and one which I kept in an aviary frequently did so, but it looks awkward in that position with its long hind claw pointing straight downwards.

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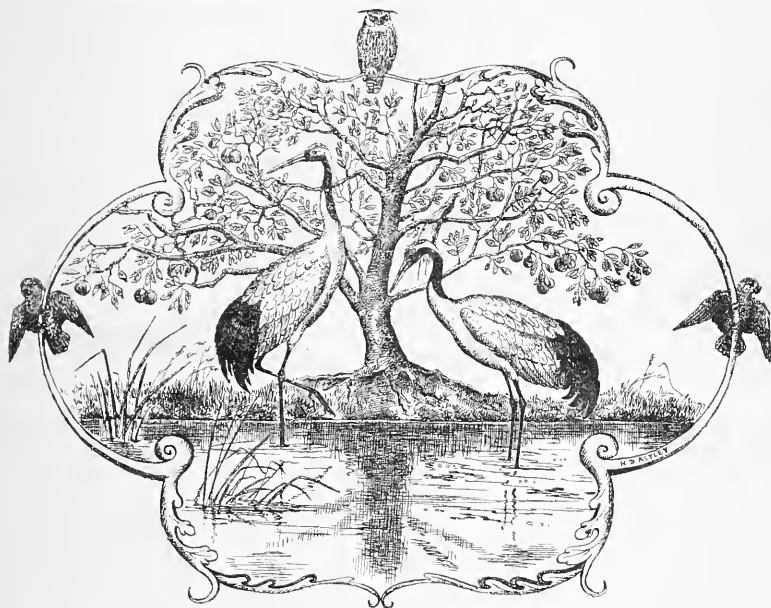
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JUNE, 1912.

## NOTES ON SEXUAL SELECTION.

By FRANK FINN, B.A., F.Z.S.

### PART I.

As most of my readers know, Darwin's celebrated theory of Sexual Selection argues that the superiority in appearance of male birds, so often notable, is due to the selection, through untold ages, of the handsomest males by the hens; and, as there is extremely little direct evidence in favour of this view, and what little there is has been chiefly furnished by aviculturists, it seems worth while to review the subject; since the theory will in the end probably have to stand or fall on the verdict of aviculturists, who are or should be, I have always maintained, the most truly scientific of ornithologists, our hobby giving us the most perfect control of the only scientific method, that of observation and experiment.

In the first place it is as well to enumerate briefly the forms taken by sex-differences among birds, choosing one's examples as much as possible from species well-known in aviculture. We find then, where the male is the superior sex the following forms of difference:—

- I. Male similar to female in size (or nearly so) and structure, but richer in colour:—European Chaffinch (*Fringilla cœlebs*), Scarlet Tanager (*Rhamphocelus brasilius*) and numberless others, this being far the commonest form of sex-difference.
- II. Male not only richer in plumage than female, but possessing special structural decorations:—Common Fowl (*Gallus gallus*), Peacock (*Pavo cristatus*), the Birds of Paradise and many others, this being the next commonest type.

- III. Male similar to female (or nearly so) in plumage, but with structural decorations:—Condor (*Sarcorhamphus gryphus*); Turkey (*Meleagris gallopavo*); Great Bustard (*Otis tarda*); Australian Musk-duck (*Biziura lobata*); Muscovy Duck (*Cairina moschata*)\*; these are all the cases I know of of this kind.
  - IV. Male simply much larger than female, otherwise similar; the Australian lark-like birds of the genus *Cinclorhamphus*.
  - V. Male like female, but with special weapons, *i.e.* spurs; Eared Pheasants (*Crossoptilon*) and many Francolins (*Francolinus*, *Pternistes*).
  - VI. Sexes alike in size and plumage but with a difference in the "soft parts":—Budgerigar (*Melopsittacus undulatus*). Cases rare, but often found in combination with I. and II. *i.e.* plumage and eye or beak-colour both different.
- In some cases these differences are permanent, as in the Fowl; in others the male has a distinctive plumage (or beak colour) only during part of the year, generally only during the breeding season, as in the Indigo-bird (*Cyanospiza cyanea*), the Whydalis, and many of the Ducks.

The few converse cases, where the female is the superior sex, fall under three classes:—

- I. Female of same size as male but brighter:—Eclectus Parrots (*Eclectus*), Paradise Duck (*Casarca variegata*). A rare case.
- II. Female both larger and brighter than male:—Phalaropes (*Phalaropus*), most Hemipodes (*Turnix*).
- III. Female larger than male, but duller:—Harriers (*Circus*), Kestrels (*Tinnunculus*); Blackbird (*Merula merula*); some Bustards (*Sypheotides auritus*, &c.)
- IV. Female simply larger than male, otherwise similar:—Emu (*Dromæus australis*); Cassowaries (*Casuarinus*); Kiwis (*Apterygidae*); Tinamous (*Tinamidae*); Jaçanás (*Parridae*).

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\* I am speaking here of the *wild* Muscovy Duck, in which the female has no bare eye-cere or beak-knob; in domestication she usually shows these points, an interesting case of transference male characters to the female without human selection, as Muscovy Ducks are not "bred to points."

- V. Female like male, but with brighter "soft parts"; Asiatic Jabiru (*Mycteria australis*); some Cockatoos (*Cacatua leadbeateri*, *sulphurea* and *roseicapilla*). In these the iris is brighter in the female.

No female bird possesses special structural decorations or weapons, so that for some reason or other evolution in the direction of female superiority does not (? cannot) proceed very far.

Sex-similarity, on the other hand, is of two kinds:—

- A. Both sexes may be dull, or have plumage of a type which is feminine in allied species which show masculine superiority; *e.g.* Corn-bunting (*Emberiza miliaria*); Australian Wild Duck (*Anas superciliosa*). An extremely common case, applying often to whole families.
- B. Both sexes may be bright, or have plumage which is masculine in species showing masculine superiority; *e.g.* Goldfinch (*Carduelis carduelis*); Superb Tanager (*Calliste fastuosa*); Chilean Wigeon (*Mareca sibilatrix*). A comparatively rare case, but still sometimes found in whole groups.
- C. Both sexes may have special weapons, *e.g.* Cassowaries (*Casuaris*); Spur-winged Geese (*Plectropterus*) and all Spur-winged birds of any sort.
- D. Both sexes may have special structural decorations—special by comparison with their young or their nearest allies; *e.g.* Guinea-fowls (*Numidinae*), especially the hackled Vulturine (*Acryllium vulturinum*).
- E. Both sexes may be alike, but have different voices, *e.g.* many ducks, whether of dull or bright plumage.

As in the case of sexually differing birds, the decorations of similar-sexed birds may be seasonal, a most striking case being the "Osprey" plumes worn by breeding Egrets (*Herodias*), and the ruff of the Crested Grebe (*Podiceps cristatus*).

There is one case of a seasonally developed weapon in the Pheasant-tailed Jacarás (*Hydrophasianus chirurgus*) in which the wing-spurs are only developed in the breeding-season.

There are, of course, plenty of cases which connect various classes:—*e.g.* in the Blue Tit (*Parus cæruleus*) and Gouldian Finch (*Poephila gouldiæ*), the sexes are both richly coloured, yet

the female is noticeably the duller of the two ; in the Turkey, the cock only has well-developed structural decorations, and is also far larger than the hen ; and many birds have a plumage which can hardly be called rich, but yet shows a distinction between the sexes, or between both sexes and duller allies ; for instance, the cock Sparrow (*Passer domesticus*) is not a richly coloured bird, but masculinely bright in comparison to the hen, as are both sexes of the Tree-Sparrow (*P. montanus*) compared to many finches, such as the Rock-Sparrows (*Petronia*) ; but on the whole the classes are pretty definite.

Sometimes several differences will be found between near allies ; this is particularly well shown in the duck family, *e.g.* all the nearest allies of our common wild duck (*Anas boschas*) have plumage, in both sexes, much like the female of that bird ; but in the three kinds of Wigeon (*Mareca*) we get one with both sexes of a masculine type (the Chilian), while the other two have bright males and dull females. Similarity of general habits, then, has nothing to do with sex-colouration ; nor does this similarity affect the question of the superiority of the male over the female sex or *vice versâ*, since the Hemipodes and Tinamous, in which the female is the finer bird, agree in general habits most closely with quails and partridges, in which many kinds have superior males.

We may now pass to the question of display, and in regard to this the following facts seem to be well established :—

- I. Most (probably all) birds display in some way or other, whether dull or bright, specially decorated or not. Prof. A. R. Wallace has emphasized (Darwinism) the display of dull-coloured birds, *e.g.* goatsuckers, geese and vultures ; Mr. Howard (British Warblers) has shown that warblers do it ; Mons. G. Rogeron (Les Canards) has pointed it out in the case of the dull-coloured allies of the Mallard. The display of bright-coloured and decorated birds needs no comment ; everybody knows it, whether aviculturist or not !
- II. As Darwin says, all individuals of a species display in the same way ; it may also be pointed out that nearly allied species do so, whether bright or dull, as in the case of

the dull ducks above mentioned, which display in the same attitudes as the brightly-coloured Mallard drake.

- III. The display is often provoked by other emotions than amatory passion, *e.g.* anger; anyone can see this in the case of the Turkey and Muscovy duck, both of them irritable as well as amorous birds, and I have observed it in many species; the common Moorhen (*Gallinula chloropus*) shows it very well.
- IV. The female, both in plain and decorated species, displays as well as the male in many cases, and generally in the same attitude, *e.g.* the Peahen may be seen to show off to the Peacock with erect and expanded tail; I have seen her do this both when the cock was displaying and when he was not (different pairs in each case). Similarly females as well as males may fight for the favours of the opposite sex, as Mr. D. Dewar has seen with the Paradise Flycatcher (*Terpsiphone paradisi*).
- V. Young male birds (*e.g.* young Peacocks and Gold Pheasants) display before they are decorated, and birds which change their plumage may do it when out of colour (Jackson's Whydah (*Drepanoplectes jacksoni*) and Blue Wren (*Malurus cyaneus*).
- VI. The display generally brings out the birds' best points, *i.e.* emphasizes the masculine characteristics or what decorations the species may possess if both sexes are decorated. This is well seen in the courtship of the Sparrow and in the erection of the long head- and back plumes in Herons.
- VII. Display generally leads to fighting as well, as in the tournaments of Ruffs (*Pavoncella pugnax*) and Blackgame (*Tetrao tetrix*); but some very ostentatious birds rarely fight, though they drive each other about and show much courage in encounters with other species, *e.g.* Peafowl and Mandarin ducks (*Aex galericulata*); while some do not even meet each other when displaying; like the Argus Pheasant (*Argusianus argus*) and so cannot fight, though fierce enough.
- VIII. Males may assemble and display without any females

being present, as Mr. W. Frost has shown with the Cock-of-the-Rock (*Rupicola crocea*).

- IX. Birds may display in autumn, but no aviculturist will attach any importance to this; it simply means that they are again in breeding form after the moult, and would doubtless breed if not checked by the oncoming winter.
- X. Hens very, very rarely, show any appreciation of the display that we can perceive. It is needless to labour this point, the apparent indifference of the hen being so much in contrast to the excited energy of the male. She may even appear to be irritated; everyone must have seen the hen Sparrow attack the displaying male.
- XI. Where the hen is a finer bird than the cock, she displays, and also does the fighting if there is any done; she is in fact, masculine in character as well as in plumage and size.\*

With regard to other methods of courtship or special sexual activity at the breeding season, we have to reckon with song and gifts of food:—

- I. Generally only the male sings or gives a special call; but the female usually *can*, and often does when alone, *e.g.* Virginian Cardinal (*Cardinalis virginianus*). In some cases, however, *e.g.* in many cases, the voices of the sexes are absolutely limited to them, and apparently depend on structural peculiarities in the windpipe, as anyone can see with the two domestic ducks, Common and Muscovy.
- II. Song uttered under the influence of anger or even fear, as well as amatory passion; skylarks and robins sing, as cocks crow, when challenging each other; the skylark will sing in snatches when chased by a hawk, and I have heard a bantam cock crow while his overgrown spurs were being pared down and he was held in the hand.
- III. Song or male calls usually irritate rival males intensely; I have seen two cock fowls manœuvre about a lot, but not fight till one crowed.

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\* I have, however, seen the male Rufous Tinamou (*Rhynchotus rufescens*) display to the female, drawing himself up and expanding forward his cinnamon primaries; as in other Tinamous the sexes in this bird are coloured alike, but the hen is larger.

- IV. Song is much noticed by females in some cases; hen canaries often annoy breeders by "pairing by the voice" with undesired mates; and the hens of some of the almost dumb (to our ears) Mannikins (*Munia*) listen intently to the song of the males.
- V. In species where the female is superior she calls most, or most strongly; but such birds never have an elaborate song, any more than structural decorations.
- VI. A species may combine the two attributes of high colour and structural decoration and a musical voice, though this is rare, an example being the King Bird of Paradise (*Cicinnurus regius*), but many bright-plumaged birds sing very well, *e.g.* Goldfinch, Pekin Robin (*Liothrix luteus*), Virginian Cardinal.

But the very best songsters of all are usually plain, though the majority of plain birds, it must be remembered, are no better singers than the gaudy ones. Exceptional song, like exceptional plumage, is a rare gift, and as in the case of plumage, we find great differences among near allies.

With regard to the other amenities of courtship, gifts of caresses, we have to notice:—

- I. The male generally feeds the female, not *vice versa*.
- II. Feeding may be done from the crop, in which case it often runs in families, *e.g.* all cock parrots and pigeons feed their females, though all finches do not; or the food may be brought and given from the beak, in which case there are differences in the practice of members of the same family, *e.g.* the common cock, the Satyr Tragopan (*Cerionis satyra*), and the Peacock Pheasant (*Polyplectron chinquis*) feed their females, but the Common, Gold and Amherst Pheasants do not, nor does the Peacock. Among the ducks, the Carolina (*Aex sponsa*) alone seems to feed the female.
- III. In many birds no love feeding is ever done, as in the case of the Sparrow.
- IV. Among birds with masculine attributes in the female, the hen Hemipodes feed their males, as Mr. D. Seth-Smith has shown.

- V. Sociable species will feed birds of the same sex, if without mates.

The custom of caressing, usually head-tickling, offers these peculiarities:—

- I. Both sexes do it, but the male most as a rule.
- II. It runs through groups to a great extent; *e.g.* Parrots and Pigeons, and the Mannikin and Waxbill groups of Ploceine Finches, are all great head-ticklers; but it may crop up in more or less isolated cases, thus, among the ducks, the Mandarin and Carolina, the 'Tree-ducks' (*Dendrocynna*), and the Orinoco Goose (*Chenalopex jubatus*), seem to be the only practisers of the habit. The majority of birds do not caress their mates at all.
- III. Caressing species will fondle their own sex, if without mates, and will also caress even non-caressing species.

I now pass to some considerations about the bird mind, as we know it; the following conclusions have suggested themselves to me:—

- I. Birds, like ourselves, are guided by sight only, and see much as we do; *i.e.* they are not colour-blind. The mistakes they make prove this; hen-feathered cocks were objected to by "cockers," because their rivals in the pit mistook them for hens; and any harmless bird at all resembling a hawk is much feared at first. Birds often hate species which display similar colours, *e.g.* I have seen the Blue Wren (*Malurus cyaneus*) violently persecute the Red-legged Sugar-bird (*Cereba cyanea*). They must also be able to observe detail, for otherwise they would not know their own mates; all our observation of them shows they *do* know these where *we* can see the differences.
- II. On the other hand, they have no "refinement"; those species which collect objects show a blind love for anything bright and strange only, and they nest in the ugliest situations as well as the most beautiful.
- III. They generally hear as we do; witness the often perfect imitation of the human voice by many birds.
- IV. But here again, they have no "refinement," the best singers



will sing in answer to a sewing-machine or a frizzling fry-pan; and mockers like the Shama (*Cittocincla macrura*) pick up bad notes more readily than good, while parrots love coarse oaths.

- V. What tastes they do have, run in species and even groups; *e.g.* most typical finches like hempseed, most crows steal, certain birds always use feathers in their nests or even snake-sloughs, &c.
- VI. They "fall in love" and take dislikes, as anyone may see with the relations of pet birds to their human associates; and it is well known that partridges, for instance, are best left to pair themselves, and some species, not meeting in nature, hate each other when brought together; for instance, the Paradise Duck (*Casarca variegata*) and Upland Goose (*Chloëphaga magellanica*). They may form bachelor or spinster friendships; and may do this with alien species and with beasts.
- VII. They can discern the sexes of alien birds, even when very different; *e.g.* two different hen common pigeons I had at different times along with fowls, many years ago, both became attached to the cock, and wanted him to pair, but he would not; one also hated the hens, and would attack them when they could not trample her, by reason of being on a perch or laying.
- VIII. They at once recognise a similarity in note; *e.g.* I have heard a Pekin Robin answer the call of the Wryneck (*Iynx torquilla*).
- IX. They recognize their own species independently of variations in colour, shape, and size; the behaviour of domestic poultry of different species (barring occasional aberrations of conduct, most frequent in turkeys and ducks) proves this, and yet there is hardly any evidence that birds go at all by scent. Moreover, allied species of different colours associate at once, as we see with the different species of Mannikins.

(To be continued).

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## DIARY OF BIRDS SEEN ON THE WHITE NILE.

By RICHARD STAPLES-BROWNE.

## PART III.

*(Concluded from page 185).*

Feb. 15th. At sunrise we started on our homeward journey, and at 8.30 a.m. landed at a village of Bari negroes, where we obtained some bananas. As we had had no fresh fruit for over a week these were much appreciated. We got back to Gondokoro without much difficulty, but from there to Lado we had an uncomfortable passage owing to the swiftness of the current and the frequency of shallows. A short distance north of Mongalla I saw eight Marabou Storks (*Leptoptilus crumeniferus*). Towards evening we were obliged to tie up, a few miles south of Kiro, on account of the difficulty of navigation. About 9 p.m. we heard the distant sound of a tom-tom, and, meeting some Baris in the scrub, we were guided through the forest to a village where the natives were dancing in honour of the full moon. We walked for about three quarters of an hour, disturbing a Hippopotamus near the river, who straightway made for the water with much grunting. The scene at night was very beautiful, and the trees and parasitic creepers showed up to great advantage. We heard some elephants trumpeting in the distance. Arrived at the village, we were welcomed by the Sheikh, and then witnessed the dance which was more energetic than elegant. The whole village took part—men, women and children—beating time with small bones which they carried, after the style of Christy minstrels. A large fire burning in the midst gave a weird effect to the dancers. One of our cabin boys so far forgot himself as to join in. Later, we went through the village and saw a large flock of goats which were penned up for the night in a large wooden cage, in the middle of which a fire burned as a protection, I was told, against wild beasts. We returned to the boat shortly after midnight.

Feb. 16th. We started at daybreak, and early in the morning I saw some Baboons (*Papio anubis*). We wooded at Sheikh Tombé, and, shortly after leaving that place, we went aground on a sand-bank, where we remained for over two hours. Here

we caught some coarse fish, which, unfortunately, were not a very great success on the table. I saw some specimens of the brilliantly coloured Green-backed Purple-coot (*Porphyrion smaragdinus*), also a beautiful Crested Kingfisher (*Corythornis cyanostigma*). There were many bush fires in this part, some of very great extent. This wasteful burning of the trees by the natives is regrettable, as wood is not over plentiful, and a great deal is required by the river steamers. We reached Bor at 7.30 p.m. and tied up for the night.

Feb. 17th. This morning we reached the wood station of Kenissa at eleven o'clock, on leaving which we entered again into the sudd. I saw little of interest, except a large flock of Night Herons (*Nycticorax griseus*) which were perched on some low bushes having brilliant yellow flowers. These were growing on one of the small islands in the sudd, with which one occasionally meets and on which one may sometimes see an isolated palm tree. In the afternoon we passed the entrance to the lagoon on which Shambé is situated. Towards evening a cool north wind sprang up.

Feb. 18th. We passed the cutting into the Bahr el Zeraf, down which we came on our journey south, at three a.m. this morning, but, instead of turning into it, we continued our course up the main stream. This was a dull and uninteresting day; hardly any birds were to be seen and only two hippopotami. A high wind started blowing towards evening, but, in spite of it, we still suffered from mosquitoes.

Feb. 19th. We passed through Lake No shortly after midnight, and at eight o'clock this morning we again saw firm ground, with trees and villages. A terrific wind from the north lashed the river into waves and caused our boat to roll considerably. At noon we wooded at Khor Attar, where there is a Shilluk village. Here I obtained some spears made from the horns of the Waterbuck straightened out. These are not very common as most of the native tribes use iron spears made in Omdurman. At 1.30 p.m. we arrived at the mouth of the Sobat river. This tributary rises in the mountains of Abyssinia. The colour of the water is light green, which contrasts with that of the White Nile, which is brown. The line of confluence is very

sharply marked. At the mouth of the river are the ruins of an old fort, built by Lord Kitchener at the time of the Fashoda incident. We steamed up the Sobat as far as Doleib Hill, a station of the American Presbyterian Mission. The river is narrow, the banks fairly wooded and covered with high coarse grass. There were several bushes of the poisonous Sodom Apple. I saw a large flock of Marabou Storks. The mission station is prettily situated in a grove of Palms, and possesses a garden containing orange, lime, papoia and custard-apple trees, also a banana plantation. They have a small farm, with a good short-horn bull, which has to be kept in a mosquito-proof shed, and a poultry run containing fowls, turkeys and guinea-fowls. The missionaries do good medical work, and I was shown many cases of leprosy, elephantiasis, and other strange exotic complaints; in fact, their little hospital might be regarded as a veritable zoological garden of disease. Several Eucalyptus trees have been planted about the station, which are doing extremely well. In the garden I saw a pair of Long-tailed Glossy Starlings (*Lamprolornis caudatus*). After leaving the Mission we returned to the White Nile and continued our course north, arriving at 6 p.m. at Taufikia, an important military station. Here we remained a couple of hours and I again saw some Glossy Starlings. There were several Grey Herons (*Ardea cinerea*) near the town. In the evening the strong head wind continued and it became quite cold.

Feb. 20th. We passed Kodok (Fashoda) at one a.m. and Melut at 8.30. The wind continued very high and we were obliged to put up the awnings on deck to keep the spray out. In the afternoon we arrived at Meshra-el-Zeraf, a new wood-station in the middle of a fine game country. Here we remained several hours and I took the opportunity of going for a long walk into the scrub, which consisted, as usual, of Acacias and Mimosa bushes. Birds were very numerous, and among them I saw the Arsinoë Bulbul (*Pycnonotus arsinœ*), the Brown-necked Fire-Finch (*Lagonosticta senegala brunneiceps*), the Indigo Finch (*Hypochæra ultramarina*) and the African Silver-bill Finch (*Munia cantans*). There were very many Waxbills in the bushes, including the Cordon Bleu which is very common here. The bush was alive with the twitterings of the various species and the coos of pigeons

and doves. Among the latter I saw Sharpe's Turtle Dove (*Turtur communis isabellinus*), the Dongola Dove (*Turtur decipiens*) and the Palm Dove (*Turtur senegalensis*). Now and then I saw Pied Crows (*Corvus scapulatus*), and I caught sight of a Brown-necked Raven (*Corvus corax umbrinus*). I spent some time watching some Rollers (*Coracias garrulus*), and I also saw several specimens of the Red-billed Hornbill (*Lophoceros erythrorhynchus*), but these were rather difficult to approach. During my walk I came across the track of what was apparently a Leopard, but I did not catch sight of any big game. Grivet Monkeys (*Cercopithecus aethiops*) were common, and kept up an incessant chattering in the trees. There were some extremely large swarms of locusts here. Shortly after sunset I returned to the boat, after one of the pleasantest and most productive rambles I had had on this expedition. We were unable to resume our journey this evening at the time arranged, as some of our party, who had gone shooting, failed to return; we were somewhat anxious about them after dark, and turned on every electric light on board and kept the whistle going constantly. We were organising a search party when they turned up; they had lost their way at sunset—the sun going down very quickly here—and had wandered about for some hours. They were exceedingly glad to be back again on board and we started immediately.

Feb. 21st. We are now back in the country of the Baggara Arabs. We passed the Jebelain hills and Abu Island, the scene of the Mahdi's retirement for solitary meditation, this morning. We went through the White Nile Bridge at five in the afternoon, and later, stopped at Kosti, where we caught a large catfish, weighing over twenty pounds; its flesh was not very palatable.

Feb. 22nd. We passed El Dueim at four a.m. this morning, and are now amongst desert scenery once again. The sand comes down to the water's edge with Cacti and other desert plants at intervals. There are a few trees at some distance from the river; I saw several fine mirages during the morning. Wild fowl were very plentiful, and I noticed some Ruddy Shelduck (*Tadorna casarca*), Pintails (*Anas acuta*), Garganey (*Querquedula circia*) and Shovellers (*Spatula clypeata*). Egyptian Vultures were common, and I also saw a few Griffon Vultures (*Gyps*

*fulvus*), and here and there a Kestrel (*Falco tinnunculus*). Kites and Crows were numerous. We landed in the afternoon at an Arab village, and later, saw again the huge flocks of goats which we noticed on our way south. Also we passed a large drove of camels, probably numbering fifty or more, coming down to water. We arrived at "Gordon's tree" and tied up there for the night.

Feb. 23rd. We landed at Khartum for breakfast. I spent a couple of days in Khartum, making arrangements for the shipment of my small collection of native curios to England, and then started north again across Nubia bound for Luxor.

This concludes the narrative of my journey on the White Nile. I may add that the diary was not kept with any view to future publication, but, on showing it to some friends, they gave it as their opinion that it might prove of general interest; I have, therefore, given it just as it was written on board, excluding only those parts which had no bearing on natural history.

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## WINTERING CRANES IN NEW ENGLAND.

By J. L. PHILLIPS.

It might interest some of the readers of the *Avicultural Magazine* to hear about my experience with Cranes in this cold climate. We have had here at Wenham, eight Demoiselle, two Sarus, two Manchurians, two Asiatic White, and two European Cranes. The latter two species were only acquired in January, 1912.

I started by wintering Cranes in a barn, but was advised by Mr. G. O. Tilley of Darien, Connecticut, to winter them outside. I took his advice in part, though our winters here are much more severe than in Eastern Connecticut, and kept out this winter without any shelter other than some small *Arbor vitas*, two Asiatic Whites, two Demoiselles, and two Europeans.

The Sarus and the Manchurians were driven into a small shed at night, but on the whole did not seem any the better for it. The rest of the Demoiselles were wintered with other Water Fowl in fairly comfortable quarters. One Sarus (Eastern race) died of a general suppuration of the joints and tendons of the legs and feet. He was lame for some time, and had I known what I know

now I should have placed him immediately in water or on damp moss. The continual standing on hard frozen ground and ice seems to be a bad thing for Cranes, though their feet do not freeze even at temperatures as low as 14°F.

One of the Asiatic Whites developed a bad foot, but the advent of a couple of warmish days with wet ground immediately cured it. The past winter has been the most extreme in a decade. The mean January temperature for Boston was about on a par with the lowest January mean ever recorded by the weather bureau. The temperature recorded here from 0° to 14° on many consecutive nights. One day the thermometer was 0° at noon. As an instance of the hardihood of Cranes, one of my Europeans jumped the fence the day after he arrived in January, and not being oriented as to his new home, we could do nothing with him. He escaped early on January 26th and travelled over a large tract of country, but owing to heavy wind and drifting snow we could not locate him. On the afternoon of the 29th he came back, decoyed apparently by the calls of the Manchurians. He was captured with some trouble and found to be none the worse for his experience. He had weathered the blizzards of snow, and during two of the three nights the thermometer was well below zero. He got absolutely nothing to eat.

In Eastern Connecticut Mr. Tilley has wintered Sand-Hills, Japanese White Necks, Sarus, Manchurian, Asiatic Whites, Europeans, Demoiselles, and even a pair of the rare Hooded Cranes (*Grus monachus*) without other shelter than a windbreak of evergreens, but as before observed the climate is milder than here. The Stanley and Crowned Cranes of Africa required, he found, a good deal of shelter, though they were out in a yard through the day.

Those interested in the Crane family will mourn the loss of our splendid Whooping Crane, gone probably for ever. The last published observation of this species that I know about was made by Ferry (*Auk*, Vol. 27, p. 195) who noted an individual at Quill Lake, Saskatchewan, July 14th, 1909. E. H. Seton, in his book the "Arctic Priaries," on p. 287, noted five Whoopers flying overhead on the Athabaska River, October 16th, 1907. These are perhaps the last that will ever be seen in the wild.

The extinction of such a fine species is a real calamity and one that will be realised by the next generation much more than by this one. Our Sand Hill Crane is getting scarce, and I am very much afraid he is a doomed bird unless special legislation and large tracts of land are set aside for its benefit.

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## WEAVER BIRDS.

By SIDNEY WILLIAMS, F.Z.S.

Having been asked to write a few notes for our Magazine, I have chosen the Weavers—which are great favourites of mine—as my subject. At present I have kept the following species: Red-billed (*Quelea quelea*), Orange Bishop (*Pyromelana franciscana*), Napoleon Weaver (*P. afra*), Crimson Crowned (*P. flammiceps*), Grenadier (*P. orix*), Madagascar (*Foudia madagascariensis*), Yellowish Weaver (*Sitagra luteola*) Rufous-necked (*Hyphantornis cucullatus*), called sometimes by the dealers the Atlas Weaver, Black-headed (*H. melanocephalus*) and Baya Weaver (*Ploceus baya*). I have also two birds which have not come into colour and cannot at present identify them. One, I think, is a Comoro Weaver (*Foudia eminentissima*), and the other is about the size of the Rufous-neck, only black eyes instead of red. Body colour pale greenish buff, showing small patches of brilliant yellow on breast and throat. This bird I picked up for a shilling in a dealer's shop in East London a few weeks back. Whenever I am down that part, and it is usually once a week, I am always on the look out for anything new in Weavers, and have more than once picked up a bargain. It was during one of these visits that I saw and bought the Black Bishop's Weaver, which I exhibited at the Horticultural Hall in 1910. At the time I thought I had discovered a new variety, but after discussing the bird with some of our members who were present, we came to the conclusion that it was only a melanistic form of *P. franciscana*. After the moult it could scarcely be told from the other Orange Bishop which shared its cage; and to my surprise, when it came into colour last year, it assumed the normal orange and black colour, thereby proving its identity. Why having once been abnormal in colouring it reverted to the normal I cannot say, but I am told



by a dealer who visits Africa that he has seen them flying with other birds of their kind occasionally in the wild state.

Looking through our magazine for the past few years I find very little mentioned about these interesting birds; it may be they are not thought interesting enough to write about, or perhaps it is having got a bad name for meddling with other birds which are nesting (and I must admit no bird can be more mischievous) they are not kept. It certainly is most annoying to find a clutch of eggs ruthlessly pitched on the floor, in order that Mr. Weaver can amuse himself with trying the material on to everything within his reach, or building himself a nest and usually stopping there, for very few Weavers I think have bred in this country. Here is a chance to win a medal for someone.

Now if you can devote an aviary entirely to Weavers I do not know of any birds more interesting. Most of them have, so to speak, two changes of raiment, and to watch the transformation from dull buffish brown to brilliant oranges, scarlets, yellows and blacks, which we see in the case of the Orange Bishop, Madagascar Weaver, Napoleon and Black-headed Weaver, when assuming breeding plumage, must make us stop and consider how wonderful nature is. Although we find these brilliant colours in the Weavers, they are very hardy birds and live to a ripe old age in captivity. I will quote Dr. Butler's experience of longevity among his birds: Black-headed lived 14 years, Madagascar and Napoleon 12 years, Orange 10 years, Baya 8 years, Common 7 years, and a Red-billed 15 years. I think for small cage birds this would take a lot of beating. Then as regards the price, most of those I have mentioned can be bought for 2/6 each, and very often cheaper when out of colour. If you are within easy distance of some foreign bird dealer and wish to keep a few find out when he is expecting a consignment of African birds in, and if you are not well up in this species, get a friend who is to go with you and look carefully through the stock, usually for an outlay of a few shillings you can get two or three kinds of Weavers; only take my advice and get them if possible out of colour, for the pleasure of watching them come into colour for the first time is never forgotten.

Their bill of fare is simple. Weavers require only Canary

seed, white millet and spray millet, and also relish a few meal-worms and spiders. Mine are fond of green food such as chickweed, lettuce, etc., but I have heard all will not eat it.

If I were asked I should recommend anyone wishing to start in the foreign cage bird fancy to try Weavers, for, as I have pointed out, you have in them hardy, inexpensive, beautiful, and interesting birds, and what more could be desired. Should any of my readers at any time wish to procure any and are unable to do so, being close to the London dealers and able to frequently visit them I shall be only too delighted to get any specimens they wish. To assist in adding another member to our ranks is to me always a pleasure.

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## BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

The arrivals for the past month have been few. Mr. Meade-Waldo has presented a very fine male Ural Owl, which had lived in his possession for no less than twenty-eight years. The Society has only possessed three specimens previously.

Eight of the rare Ruffed Lorikeets (*Calliptilus solitarius*) from Fiji were temporarily deposited in the gardens, these and the pair recently deposited by Dr. Bahr being the only specimens ever imported, so far as one knows.

In the King's Nepalese Collection the only birds of any importance are a pair of Monaul Pheasants, two cock Cheer Pheasants, a pair of Black-backed Kalij Pheasants and two males of the rare Kokla or Wedge-tailed Fruit Pigeon, of which species a coloured plate and a most interesting article appeared in the March number of this journal.

The White Storks succeeded in hatching no less than five young birds, the first of which appeared nearly a week before the last. All went well until the eldest was about ten days old, when four of them died, one after the other. Dr. Plimmer, the Society's Pathologist, made a *post mortem* examination and reported that they had every appearance of having suffered from gout, the body cavity being coated with uric acid crystals. They

were fed by the parents on chopped fish and small pieces of meat, on which diet the surviving bird is growing enormously.

We have reared a brood of six Black-tailed Water Hens (*Tribonyx ventralis*) using a bantam as a foster mother.

Waterfowl seem to be very backward with us this year, for what reason I know not unless the dry weather has anything to do with it. Very few of the Ducks are laying and I am afraid we shall not have such a good season as we had last year. The Upland Geese have produced a brood of six strong goslings, and the Variegated Sheldrakes or New Zealand Paradise Ducks have four young ones. Five Carolina Ducks, four Egyptian Geese and the three Chestnut-breasted Teal, mentioned last month, complete the list of Waterfowl up to the present.

The young Pheasants make a better show. We have quite a number of Sonnerat's Jungle Fowls, also a brood of hybrids between the distinct Javan Jungle Fowl and the Red Jungle Fowl, three young Horned Tragopans, Swinhoe's Elliot's Black-backed Kalij, Reeves and Golden Pheasants.

In the new "Summer Aviary" many species are nesting and some of the doves have young, but I shall hope to be able to report more fully on this next month. D. S-S.

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## THE FORTHCOMING RECEPTION OF MEMBERS.

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In the March issue of this Magazine it was announced that the Council proposed to hold a friendly and informal reception of the Members of the Society early in July. At the request, however, of the President, Canon DUTTON, the date has been altered and *Friday, June 21st* has been decided upon. Members are requested therefore to take notice that *the reception, followed by tea, will be held at 4 o'clock on that date in the Fellows' Tea Pavilion in the Zoological Gardens.* Since it is necessary to know beforehand the numbers likely to attend, members who wish to be present are asked to inform the Hon. Secretary as early as possible in June, making use for that purpose of the addressed post card enclosed with their copy of the Magazine.

R. I. POCKOCK, *Hon. Secretary.*

## CORRESPONDENCE, NOTES, ETC.

## THE MOCKING BIRD.

SIR,—I have kept Mocking Birds (North American) but have never heard them mimic any sound they could hear. They thrive well in an aviary high enough to allow them to tumble in the air. I noticed one curious fact with regard to their eyes, which varied in shade of colour, some having dark brown eyes, others light yellow-grey. The birds with the light coloured eyes were very ill-tempered and pugnacious and spiteful, but not those with the dark eyes. It was easy to make friends with these, but I never trusted the others. I have observed this with other birds also, and have often wondered if it is the rule or the exception, and if others have noticed it. My Mocking Birds warbled and 'chipped' but I was disappointed in their vocal powers. They were healthy enough and in very good plumage. They had a grass plot to peck about on and a tree to sit in. They loved bathing, and their soft grey and white plumage looked exquisitely lovely after the toilet. I cannot say they were either especially clever or capable of attachment. Probably they are both in their wild state.

KATHARINE CURREY.

## THE WEDGE-TAILED GREEN PIGEON.

SIR,—The last two numbers of the Magazine have just followed me home from India, so that the following remarks are somewhat belated.

Mr. Dodsworth's interesting article on *Sphenocercus sphenurus* calls for several remarks. In the first place, I should say that Mr. Dodsworth is quite correct in assuming that the description of his cage-bird and that of Blyth's *Vinago cantillans* is merely that of the young bird. The Wedge-tailed Green Pigeon takes at least two years and perhaps three to attain his full plumage, and this I have found to be the case with all the members of the *Treroninae* I have kept in captivity.

My birds of all species were very greedy feeders in captivity, eating freely all grain, fruit and much green stuff also, as well as white ants or termites. These they captured on the ground, running after them with great speed as they fell after flight. All my birds also drank freely, settling either on the ground or on the edge of the pan for this purpose.

I have seen wild birds drinking also, sometimes alighting on sand or shingle alongside streams for this purpose, but more often clambering down the cane brakes—in which they were settling down for the night—until they could bend over and reach the water.

I have had many in confinement and can endorse all that Mr. Barnby Smith says in his article on Satyra Tragopan in our April number. The nuptial displays of Blyth's Tragopan are just as wonderful as those of the Satyra, but when my birds were fully breeding the horns were *always* more or less inflated and visible, though erected and fully inflated only during the nuptial displays.

E. C. STUART BAKER.

## THE BLUE CHAFFINCH OF TENERIFFE.

SIR,—Mr. Astley's interesting account of the Teydean Chaffinch in the May number of the *Avicultural Magazine* calls for some slight correction. *Fringilla leydeae* is entirely confined to the Pine Forest district of *Teneriffe*. There is a closely allied race inhabiting the Pine region of Gran Canaria, but it is very rare.

There is no possibility of *F. leydeae* being found in *Fuerteventura*, neither it, or any other Chaffinch could possibly live there, as with the exception of a few Date Palms there is no forest of timber. I know the Islands intimately well, and am certain of it.

A full account of *F. leydeae* as an aviary bird, with notes on its breeding in own aviaries, appeared in Vol. I. of the *Avicultural Magazine*, page 103 (1895).

E. G. B. MEADE-WALDO.

## SEXUAL DISPLAY.

SIR,—I witnessed, to-day, a sight which struck me as being so comical and curious as to be, possibly, worthy of record.

When in the flight of the Western Aviary at the Zoo, next to that in which the Streaked Laughing Thrush (*Trochaloxyrum lineatum*) is, I observed him to be in full and active display. His feathers were all puffed out in the "petticoat" form in which those of Lawes' Bird of Paradise are in similar circumstances, and his short little wings were extended much in the manner of those of the Greater Bird of Paradise when he shews off, and he was pirouetting on the perch. I watched him at a distance of three or four feet only, for fully half-a-minute, and made myself absolutely certain that the object of his attentions was—the Long-billed Butcher-crow (*Barita destructor*).

The Laughing Thrush is a friend of comparatively long-standing and always comes down to my hand, but so occupied was he on this occasion that I had to wait some little time before he descended. When he did come, however, instead of paying his usual attention to my mealworm, he faced his love and continued his display from my finger.

On other occasions I have seen instances of misplaced affection between birds, e.g. between a Rifle-bird and a Toncan, a Grey Struthidea and a Black Hargnest, &c.; but a less promising flirtation than this I never have observed.

Bailey, the keeper, to whom I told what had happened, suggested that the bird had assumed a fighting attitude in connection with mealworms and the donation of them to other birds; but I am convinced that the posture was an amorous and not a combative one, because, not only had I not fed any other bird within the Laughing Thrush's view, but, when I offered him a mealworm he was indifferent to it.

ARTHUR DENMAN.

## THE BREEDING OF KNOTS.

SIR,—In reply to Mr. C. Barnby Smith's inquiries in last month's *Avicultural Magazine* with regard to the nesting of the Knot, I gladly give all the information at my disposal in the hope that it may be the means of someone being successful with them, but I fear that some, perhaps the most essential points have escaped my memory, being such a long time ago since we tried to get them to nest. I believe that it is well known by a good many how we treated them in the first place. Several pair were kept indoors during the winter in a regular heat, I think it was 55 degrees; when the warm weather came they were let out into a large aviary, 56 feet long, 46 feet wide and 9 feet high, with a good deal of long grass, several Evergreen bushes, a gravel path 4 feet wide all round and a stream of water in the centre. The birds did very well during their confinement indoors, and when let out, every one was in the best of health and in full breeding dress. We fed them on minced fish, sheep's heart, soaked bread, Spratt's meal, soaked or scalded lettuce, or any other tender greens, chopped finely and all mixed together.

I believe that the cause of our failure in not getting them to nest was that we neglected giving them some rough surroundings in the way of boulders and retired corners here and there in the outer aviary. Long grass did not appeal to them as suitable nesting quarters, but on the other hand it was very necessary for the birds; they found it a happy hunting ground for various insects of which they were expert catchers. In the early mornings and late evenings the birds were always very restless flying round and round the full extent of the aviary all the time calling loudly to each other; this would go on for an hour or more at times. As autumn and spring came, they were much more restless, beginning in the afternoons to utter their plaintive call and keep on the wing, more or less, until dark. During daylight I never saw one hurt itself in any way, they would carefully avoid all obstacles in the way, such as uprights or perches; but at nights they were not so fortunate, I have often picked one up in the morning with its head broken through coming in contact with something during the night; they long for migration more than any bird I ever had charge of. The amount of exercise they take keeps them in good health, doubtless this accounts for their long life in confinement, to keep their flight feathers cut, or pinion them would, I think, be a mistake. Apart from those which were killed at night, all the remainder of the flock died of old age, and I think it is curious that as they dropped off one by one they were in full breeding plumage, and over fat, the latter I attribute to want of exercise: I noticed particularly that as old age came along the birds did not crave for liberty and got lazy, hence over-feeding and finally heart disease and other maladies.

R. COSGRAVE.

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Photo by R. Cosgrave.

West, Newman proc.

OWEN'S APTERYX ON A REEVES PHEASANT'S NEST.



## OWEN'S APTERYX.

SIR,—The extraordinary proceedings of an Owen's Apteryx (*Apteryx oweni*), which formed part of the collection here will, I am sure, amuse a good many. On April 4th last a Reeve's Pheasant made a nest under a fallen bough of a thorn tree, where nettles and other rubbish grow.

When three eggs were deposited they were discovered by the Apteryx during his nocturnal ramblings and immediately annexed by him. You can imagine my surprise and anger when I found him on the nest, and thinking it was a mere accident, or a slight fancy, I picked him up and removed him more than 100 yards away, to his favourite hiding place. Next morning he was again on the eggs, and I removed him once more, only to find him back on the nest the following morning.

Since that he has sat on the eggs, in a most business-like way, only that I think he is a strong believer in the "Shops Assistant Act!" having taken three full days holiday during the time of his well-meaning industry. The three eggs are of course useless, but we are going to give him three good eggs just ready to hatch to see what happens.

The Pheasant went away disgusted, and did not nest again for ten days; by that time doubtless she forgot that a Moonlighter occupied the same enclosure as she did.

The accompanying photograph shows the bird and its surroundings much better than my feeble attempt to describe it.

For some years we have had nests disturbed at nights in this enclosure, particularly Pheasants; the eggs would be strewed about and the nest likewise showing unmistakable signs of a severe struggle for possession. I have suspected Oweni for this and now feel sure that I was right in doing so. It is a great favourite and does so well in this enclosure, having been entirely self-supporting for over twenty years. During severe winters I have offered him food, but he would not touch it, his natural food is quite plentiful during the greater part of the year, and consists of worms and any insect small enough to swallow whole.

Although strictly nocturnal it is quite surprising how accurately he will find his way to one of his well known hiding places. When taken from one of these places during daylight and placed on the ground twenty yards or more away, he will remain motionless for a few seconds to take his bearings and then start off at a great pace in a bee line for the place that he had been taken from. To describe this "run" properly is far too much for me. Roughly, its a double shuffle, dot and carry one sort of gait. The head is carried low with the bill almost touching the ground, always making use of the feelers with which he is well provided.

R COSGRAVE.

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## REVIEWS.

## GAME BIRDS OF SOUTH AFRICA.\*

Major Horsbrugh, a well-known ornithologist and sportsman and member of our Society, is to be heartily congratulated on the first part of his very practical book. It is obviously written by one who knows the birds of which he writes, and by condensing the description, distribution and synonymy into a few concise lines he is able to tell us something of the habits, food, method of approaching them from the sportsman's point of view, and what is perhaps of most interest to us, how they should be treated in captivity. The author is a keen aviculturist, and even with species which he has not kept, his suggestions founded on observations made in the field cannot but be most valuable to those who may be fortunate enough to procure any of the species mentioned. The coloured plates which accompany every species, and of which sixteen are included in the present Part, are most accurately and carefully done and well reproduced, so that the wrong identification of any species should be an impossibility. Our only criticism of them is that the figures have been drawn rather too large for the size of the page, and in some cases, where both sexes are shown, the attitudes due to the exigencies of space are rather awkward.

We can thoroughly recommend this book, which gives the maximum knowledge about each species in the minimum of space.

## WILD BIRDS OF THE GIZA GARDENS.†

The first list of the Wild Birds of Giza Gardens, which was published in 1908 in response to the numerous enquiries from visitors, was soon sold out, and the present list with alterations and additions forms a second edition. The Gardens occupy some 52 acres, and in this space no less than 187 wild species have been observed; the majority of these are migrants or winter residents,

\* The Game Birds and Water Fowl of South Africa, Part I, by Major BOYD HORSBRUGH, with coloured plates by Sergeant C. G. DAVIES, to be completed in four parts. London: WITHERBY & Co. 21/- net.

† Wild Birds of the Giza Gardens by MICHAEL J. NICOLL. Cairo: Printed at THE NATIONAL PRINTING DEPARTMENT. Price: 10 p.t. or 2/-.

only seventeen species being actually known to nest. Apart from its interest to visitors this paper is of considerable scientific value and brings to one's mind better perhaps than in any other way the enormous multitude of birds that yearly on their migration pass through the fertile valley of the Nile, bounded on either side with its barren deserts.

With the rarer species the actual records and dates are given, and the author is to be greatly congratulated on this valuable addition to our knowledge of the Egyptian avifauna.

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### BRITISH BIRDS.\*

The numbers under review contain numerous notes chiefly of the occurrences of rare or local birds in different parts of Great Britain. We might draw attention to many notes on the immigration of the Little Auk during the past winter, and to the recovery of ringed birds; with regard to these latter it is noticeable that a large percentage are recaptured comparatively near the place where they were originally rung. Mr. H. H. Joy contributes a most interesting article on the ringing and recapture in successive winters of Starlings. Among the more important articles we may note one by Mr. W. H. Mullens on Thomas Muffet, a 'Doctor in Physick,' who made a speciality of birds from the gastronomic point of view; one on the Dipper, by Mr. Arthur Brook, illustrated by some very nice photographs. Mr. E. B. Dunlop also writes on the habit of some species to commence incubation with the laying of the first egg.

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### THE RARER BIRDS OF SOMERSET.†

This is a small book on the 'Rarer Birds' of Somerset, among which we find included the Blackcap, Whitethroat, Garden Warbler, Meadow Pipit, etc., and under each species is given a short description, but no mention of its distribution in the county is given.

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\* March, April, May, 1912. London: WITHERBY & Co. Monthly 1/-.

† The Rarer Birds of Somerset, compiled and edited by AMY SMITH. Taunton: THE WESSEX PRESS. Price 1/-.

## PRACTICAL BIRD-KEEPING.

## XVI.—BULBULS.

By Dr. A. G. BUTLER.

Although I have only had the pleasure of studying four, or if we include the Spotted-wing (which certainly is an aberrant Bulbul), five species of this delightful group of birds, I think perhaps my experience in keeping them may not be valueless.

The Bulbuls (*Pycnonotinæ*) or Eastern Nightingales belong to the so-called Babbling-Thrushes, and, on account of their short legs, they have been placed in a family to which the name *Brachypodidæ* was given. In their strong hard bills and general appearance they are rather Tit-like in character and the resemblance of the Indian form of *Pycnonotus leucotis* to *Parus major* is quite as great as between many mimics among birds, the crest of the Bulbul being the most obvious difference between the two.

As captive birds the *Pycnonotinæ* are extremely fascinating, being naturally hardy, easy to provide for, generally of a confiding nature, always musical, and in the case of the Persian form of *P. leucotis* noted for melodious song, and I should judge, provided that true sexes are secured, by no means difficult to induce to breed in an aviary; the behaviour of my Red-vented Bulbul in trying to assume parental duties towards a nest of young Blue-birds would seem to justify this conclusion.

Although Dr. Sharpe, in his Catalogue of Timeliine birds, records no differences between the sexes of the Bulbuls beyond size (and even then only in some of the species), although also he frequently asserts that there is no difference in plumage, I must confess that when one compares undoubted sexes of some of the species side by side the difference in colouring seems to me sufficiently marked to make one wonder how it could fail to be noted: but, apart from colouring, the outline of the bill in the two sexes differs so markedly that the would-be breeder ought to have no difficulty in selecting sexes.

In choosing a pair the aviculturist should select as male the larger bird with short robust bill, its culmen well arched, that of the female being longer, more slender and with the culmen only slightly arched; the tone of the brown colouring usually differs somewhat, and when the under tail-coverts are

rosy, the male has that colouring better defined, brighter and covering a larger area; I cannot say whether a similar difference obtains in the yellow-vented species as I have not possessed females for comparison.

The nests of Bulbuls are cup-shaped and usually are built in bushes, creepers, low branches of trees or even upon stumps; an aviary well furnished with foliage of various kinds would therefore be most suitable for breeding purposes: although the adults feed largely on fruit and, as compared with many insectivorous birds, somewhat sparingly upon insects, it is probable that the young in their early life would be fed upon insects alone and chiefly insects in the larval stage.

If Bulbuls are desired for song alone, I should certainly recommend the Persian form of the White-eared Bulbul, which is deservedly noted in prose and poetry as a grand songster: some of its water-bubble notes remind one strongly of the European Nightingale (*Daulius luscinia*): the somewhat smaller N.W. Indian form of the species is said not to sing anything like so well, but as I have only kept the Persian bird, I cannot speak authoritatively on this point; touching its smaller size, however, I was convinced by the late Mr. Abrahams who sent me a body of the Indian bird for comparison with my living example; indeed the difference was so palpable that I wondered at the observation of the late Mr. Blanford that the Persian bird "may perhaps run a little longer."

If kept in a cage the latter should be of a size large enough to enable the bird both to use its wings freely and bathe at will. Bulbuls are by nature tolerably active birds and they delight in a bath; they are when healthy scrupulously clean, and their plumage, though soft in texture, is kept beautifully unsoiled: with my Persian bird I made the mistake of confining it in too small a cage, the latter was of the box variety one foot across the front, 18 inches high and 18 inches from front to back with one perch high up towards the back, and a second low down towards the front: in a larger cage and with a greater amount of fruit to eat I feel sure I should have been able to keep it for more than five years, although perhaps it might have been less confiding than it was. I have had my first male Chinese Bulbul for close upon thirteen years already and it is still vigorous.

And this brings me to the question of food:—as a staple any good insectivorous food mixed with breadcrumbs and moistened is suitable, but Bulbuls are very fond of sweets and sponge-cake either dry or moistened or Madeira cake delights them greatly, candied fruit also and especially apricot, gives them great pleasure. They ought to have plenty of fresh ripe fruit in variety—banana, sweet ripe pear or apple, orange or ripe fig and grapes, although they seem to care less for these than many other insectivorous birds do and sometimes leave them untouched.

Insects are usually acceptable but especially smooth caterpillars, mealworms are also eaten with pleasure, but spiders alone are able to arouse enthusiasm in these birds, sometimes stimulating them to a song of rejoicing. Although most insects are eaten with satisfaction (cockroaches are almost invariably ignored), I do not find them a necessary item in the food for adult Bulbuls; they will keep in perfect health for months together without them. Of course if a Bulbul gets in the least out of sorts, a few spiders will generally set it right in a day or two.

These birds are very pugnacious; indeed, as Jerdon tells us, the Madras Bulbul is kept for fighting by the natives in the Carnatic, and he says:—"They fight sometimes with great spirit, often, I am assured, seizing their antagonist by the red feathers, and endeavouring to pull them out." In 1904, our late Editor Mr. Seth-Smith gave me a second example of the Chinese Bulbul, which, from its stouter build and duller colouring, we thought might be a hen; I turned it into the flight-cage with my cock bird and the latter at once attacked it furiously, so that I was obliged to separate them immediately: both proved to be cock birds and used to sing one against the other until I gave the plumper bird away.

Whether Bulbuls would be dangerous associates for smaller birds in an aviary I cannot say, but they are no match for such birds as Hanguests, which pursue and attack them to their hurt. In a large aviary, planted with trees, shrubs and creepers I should expect them to behave peaceably towards all excepting birds of their own kind, still it would be wiser to test them first with a few small and common species before running the risk of having valuable birds killed.

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NOTICES TO MEMBERS—(Continued from page ii. of cover).

#### NEW MEMBER.

---

Mr. F. ECKSTEIN, Ottershaw Park, Ottershaw, Surrey.

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#### CANDIDATES FOR ELECTION.

---

Mr. JEFFREY WHITEHEAD, Mayes, East Grinstead.

*Proposed by Mr. R. I. POCKOCK.*

Mr. S. ARTHUR PEGG, c/o S. PEGG & SON, Alexander Street, Leicester.

*Proposed by Mr. W. OAKLEY.*

Mr. HENRY MUNT, 10, Ashburn Place, S. Kensington.

Mr. C. BOWDEN KLOSS, Perak State Museum, Taiping Perak, Federated Malay States.

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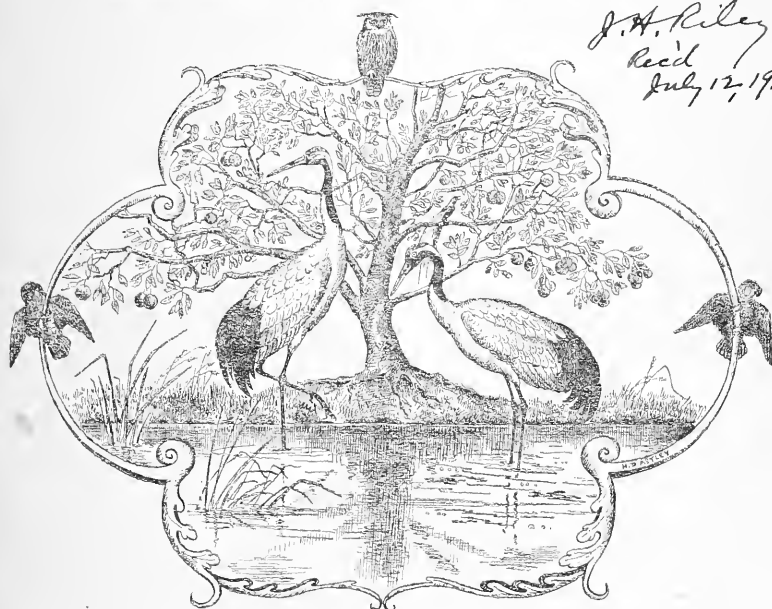
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Edited by J. LEWIS BONHOTE, M.A., F.L.S.



*J. H. Riley*  
Rec'd  
July 12, 1912.

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JULY,  
—1912.—

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*All Queries respecting Birds* (except *post mortem* cases) should be addressed to the Honorary Correspondence Secretary, Dr. A. G. BUTLER, 124, Beckenham Road, Beckenham, Kent.

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THE AMHERST PHEASANT IN DISPLAY.

# Avicultural Magazine,

BEING THE JOURNAL OF THE

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JULY, 1912.

## NOTES ON SEXUAL SELECTION.

By FRANK FINN, B.A., F.Z.S.

### PART II.

(Concluded from page 217).

Now, in view of this large array of facts, we really ought to be able to say something definite as to whether Darwin was right or not; personally I do not think his case is proved, as far as colour and decorations go,—at least that is my conclusion after many years' observation of the habits of birds in general, and their sex and social relations in particular. During my experience, I have seen the following cases in favour of the preference of a more highly decorated male or of a typical instead of an abnormal specimen:—

- I. A hen Avadavat (*Sporæginthus amandava*) twice chose a bright-coloured cock in preference to a dull one submitted to her (different couples of males each time).
- II. A hen Linnet (*Acanthis cannabina*) preferred a lame rich-coloured male to a duller but stronger and perfect bird.
- III. A hen Pekin Robin similarly preferred a weaker but brilliant cock to a duller and stronger one.
- IV. A female Spotted-billed Duck (*Anas pacilorhyncha*) chose as her mate a Mallard-coloured tame drake in preference to Spotted-bills. Here of course we are dealing with different species, but they interbreed freely when brought together by man; in nature their breeding-areas are different.
- V. Of some Mandarin Ducks in the Calcutta Zoo. the females

distinctly preferred the handsomest drake in at least one case.

- VI. A hen Bird of Paradise (*Paradisea apoda*) at the London Zoo preferred a full-plumaged cock to one in the young plumage, though both showed off.

On the other side, I have seen:—

- I. That on the London Park waters, Mallard drakes with some aberration of colour (grey breast or reddish flanks) get mates as readily as normal birds, and may have mates when these cannot obtain them. The grey-breasted birds are *duller* than the normal drake.
- II. Among a mixed lot of poultry, bantam hens preferred a half-Spanish cock, nearly all black and much too large, to bantam cocks, and to a beautiful medium-sized cock coloured just like the Jungle-fowl (*i.e.* a black-red).
- III. In the London Zoo, a hen of the Common Peafowl (*var. nigripennis*) fell in love with a male Javan Peacock (*Pavo muticus*) neglecting a Common Peacock confined with her. Here again we have a case of inter-species mating, but the species do not meet in nature.
- IV. Also in the Zoo, a female domestic Muscovy Duck preferred, of two of her brothers confined with her, one marked with white about the head to a typical black-headed one. It is true the white-headed one was the stronger, and gave the other no chance, but after his removal the duck would have nothing to do with the other, but wanted to get to a Spur-winged Gander (*Plectropterus gambensis*) next door.
- V. Another Zoo case was that of two male Red-breasted Mergansers (*Merganser serrator*), of which the smaller, duller, and less-well-marked bird got the female; here again the bird which was less typical was the stronger—he drove his rival ashore and would not let him go near the female. But she, though she showed no special attachment to him, did not show any sympathy with the beaten bird by keeping company with him, although a female bird does sometimes try to do this.



It will thus be seen that I cannot give any very conclusive evidence in favour of orthodox female preferences ; but an extended series of experiments might show a very different result, and confirm Darwin's view. Anyone wishing to make such should guard against the males getting at each other and fighting, by confining the female used and the two rival cocks in compartments separated by wire-netting with the hen's in the centre ; it would also be best to get hens which were strangers to the cocks, and to refer several pairs of cocks to the same hen, as well as trying these couples of cocks with different hens in succession.

If a series of such experiments showed that the hens on the whole preferred the more highly-decorated males, or normal males to those with more striking but abnormal colouration, the only obstacle to the acceptance of Darwin's theory would be the undoubted fact that strength counts for so much. But there is nothing to prevent the hen migrating along with a beaten bird, and perhaps the winner might not care to follow him away from his own "beat."

I do not think the apparent indifference of the hen is a very serious objection ; it has been pointed out that, from the lateral position of most birds' eyes, they are able to observe things even when they seem to be looking elsewhere, and so the hen may be observing more than we think.

Moreover, many of us have noticed the similarity between the bird mind and that of human children ; now, anyone who is fond of noticing small children will have observed this, though the little ones on first introduction to one who is fond of them may not take apparent notice of friendly overtures, their remarks to their parents afterwards, when the stranger has gone, show that they did notice and appreciate them. If hen birds are like this, it is quite possible that here is another explanation of apparent indifference to display.

For all that, however, I am quite convinced that the display, like human blushing (and we all know that some birds blush, the turkey especially!) is simply, as I said many years ago, an instinctive expression of emotion ; birds would display anyhow, whatever the result.

If, moreover, the display does not please the hen, it comes in very handy for "bluffing" adversaries; only the other day I watched with much interest a black and a white swan displaying vigorously to each other, obviously wishing to fight, but each too afraid of the other to come to blows. I have seen a Mandarin successfully bluff the much larger Dusky Duck (*Anas obscura*) by display, and another try on the same game with a Carolina; in this case, however, the Mandarin met his match, for the American bluffed in his turn, and the Chinaman gave way.\*

The same principle of bluff may tell with the hen, for hen birds are rather apt to be too independent, and to fail to respect a male whom they do not fear a little. In fact, the display as a bluff would justify its existence quite as much as if used as an attraction; and if this is the real use of it, it is easier to understand why the attitudes of displaying birds are generally more grotesque than beautiful—the displayer often looks as if he were badly stuffed for the ornamentation of a lady's hat or a fire-place! However, as I have said above, there is no reason to suppose that birds have what we call refinement or good taste, so we should be careful in imputing to them æsthetic motives like our own.

Personal preference they do show, but we ourselves cannot always rationally account for our preferences, so we may expect to wait a while before we can fathom those of birds.

Voice, however, appears more potent than colour, for colour-varieties of the same species, and species with very different colours but the same note, such as the Mallard and its dull allies, and the Hooded and Carrion Crows (*Corvus cornix* and *C. corone*) interbreed with perfect freedom when brought together, by man in the first place and naturally in the second.

If also, we consider what happens with our domestic birds, even when allowed to breed indiscriminately without selection by us, we shall see that there is a strong latent tendency to increase in conspicuousness in colour, and to the production of structural decorations, in most species.

Thus, most of them display a tendency to produce white or pied plumage; the "soft parts" often assume brighter colours,

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\* The Carolina's display is a very poor affair; he only slightly raises his tail and flattens his crest, diminishing his decoration instead of enhancing it: this is a very rare case, but I have noticed also that Bulbuls' displaying flatten instead of raising their crests.

e.g. the guinea-fowl's feet tend to become orange instead of black, and the Muscovy drake's face, naturally mostly black, becomes more, or altogether, red.

Structural decorations may appear, like the knob on the beak of the Chinese Goose (*Cygnopsis cygnoides*) which is often orange, contrasting with the normal black of the bill, and common ducks and pigeons assume crests.

Sometimes these alterations are sex-limited, e.g. cinnamon in canaries and blue in budgerigars, tend to be female colours, while white in common geese tends to be a male colour.

We can see, then, that even without selection decorative plumage and appendages, &c. tends to appear; it is true that such peculiarities are irregular, not constant as in wild species, but in the latter natural selection may come into play to limit variation. For instance, white feathers are usually soft, and so we find few birds are all white or have even white quills, easily-abraded quills being a dangerous possession for a wild bird. It is particularly noticeable that in the only wild bird which varies widely like an unselected domestic one—the Ruff (*Pavonella pugnax*) the variation (except in the rare white-necked variety) is confined to the breeding season, and the Ruff, to be able to carry his cumbrous decorations at all, must surely be able to defy natural selection on his breeding-grounds at any rate.

If decorations are the result of the withdrawal of the pressure of some form of natural selection we can see why they are so often concealed in repose; so long as a bird has the tips of the quills, for instance, dark and tough, the concealed part may be of any colour that variation gives, provided that colour is correlated with a strong constitution—for no character can escape constitutional selection, but must always go along with power of resistance to climate, a good digestion, or what not.

The nine-days-wonder of a grey thoroughbred winning the Derby this year shows how important is the principle of correlation, for if grey horses had high speed we should hear more about their doings. I think myself that the force of variation,

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\* We would point out that these instances given by Mr. Finn are all those of 'weaker' colours, whereas 'brighter' colours generally imply 'strength.'—ED.

checked by constitutional selection, will account for the phenomena both of sexual and the so-called warning colouration; any species, or either sex of a species, which can get away by reason of possessing exceptional courage or unpleasant attributes, from the pressure of selection by enemies or rivals—be successful, in fact, naturally tends to break out into striking colours, only limited by the particular constitution to which the various hues are allied.

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## THE LINNET AS A SONGSTER.

By DAVID BENTLEY.

Of all the British hardbills I have kept, the Linnet in my opinion takes the lead for song. Here, in Lancashire, where singing contests take place for quality singing, you will find some of the best birds. In Blackburn there is a Linnet Society with a large number of members, and during the season many singing competitions are held; some of the open contests being attended by fanciers from Wigan, Leeds, Chester and other distant places.

Good birds are very scarce, and are, therefore, very valuable, both as schoolmasters for young birds and also as contest singers. One fact worth noticing is that the older a good bird gets the better he sings. One of the best Linnets in this district was still in grand form when thirteen years old, and a good price was refused for it then. Another I knew was twenty-five years old, and is still taking part in singing contests. My present favourite has been caged over seven years and is still in the best of health and song.

Preference is given here by Linnet keepers to birds caught in the Fylde District and round about Lancaster, and I must say that I have never been able to get any better bird for song from any other part of England.

Linnets in captivity do not often take up the notes of other species, but are quick to learn from one another, and so good birds must be kept away from inferior ones or their song would soon depreciate, although, if good ones only are kept together, there is a chance of their improving each other, and

young Linnets trained under a good schoolmaster often turn out first-class songsters.

Although singing is one of the principal reasons why so many Linnets are kept here, good feather and fine condition are also well looked after, and I have seen many a first-class songster take a premier prize at Bird Exhibitions, and when I have myself wanted an exhibition Linnet, I have often been able to get what I required amongst our members, for many of them keep their birds on what is called "Wild Seed." This is a mixture of wild seeds that used to come from the farmers in the Fylde district, but is now supplied by Mr. J. Walsh, Naturalist, Blackburn, and for bringing out the nut-brown colour in Linnets I do not know any other food equal to it.

This wild seed is also very useful in getting these birds into breeding condition. Many of the members of our Society have never kept any other birds but Linnets, and have made a life study of them, a few for over 50 years. Some of their ideas are no doubt crude, and would sound strange to our up-to-date fanciers, but they are the result of years of experience. In their musical abilities, Linnets vary as much as human beings (they all sing more or less), but it is not every day we come across a champion, so I find it best when you get hold of a good bird to keep it. Although I have kept over fifty varieties of British birds, I may say I have derived more satisfaction and enjoyment from the Linnet as a song bird than from any other species.

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## BREEDING OF QUEEN ALEXANDRA PARRAKEETS.

*Spathopterus alexandræ.*

By HUBERT D. ASTLEY.

Last year I had the great disappointment of losing the one young Queen Alexandra that was hatched, owing to a murderous onslaught from a male Stanley Parrakeet, at least I suspected him, though the case was 'non-proven.' This year I hope I have been very much more successful.

In April all three pairs were nesting, and one hen laid at least ten eggs, but not in a desirable nesting-box, so that the eggs were rolled about, some were cracked, and the rest did not

hatch out, for the bird was fidgety. This was what I call Pair No. 3. They are now nesting again (3rd of June).

Pair No. 2 were also unsuccessful, for the hen chose too deep a box, and consequently jumped down on to the eggs, broke one or two—she had five—and the yolk stuck to her feathers, so that the other eggs were spoilt. She is now nesting again.

Pair No. 1. Well! Bravo Pair No. 1!! They selected what I am convinced is the most desirable form of nesting-box for parrakeets, which I have made at home. Two feet long, with a wooden cup let into the floor of the box at the farthest end from the entrance hole, which is at one side. The box is hung horizontally, that is lengthways on the wall, and the parrakeets can walk in and settle quietly on their eggs, feeling secure in the dark corner where the depression is made. A nice handful or two of rotten wood is put in, and on this the eggs are laid. The wooden cup is below the level of the floor, and at the other end a door is made, so that if necessary one can look in, besides which it facilitates cleaning out the box when the young have flown.

Well! Pair No. 1 took possession of such a box, which was one hung in a dark corner of a roosting house, about ten feet up on the wall. The hen laid her eggs in April, and as with Nos. 2 and 3, the male was constantly seen to feed her and to mate; the feeding always taking place first.

In the beginning of May the hen kept so closely on her eggs that I began to wonder whether she was alive, so quiet and silent was everything within; which terrible thought impelled me to mount a ladder to look in the box. As I did so, out she scurried, looking as fresh as paint. As I was up, I thought I would have a peep, opened the door, and there at the farther end, lying in the nest of rotten wood-chips, which had been bitten up very finely, were seven eggs. I hurried down and left the birds to their own arrangements. On the 12th of May, young ones were heard making their scraping raucous call when they were fed, and the male bird took to going into the nest as well as his wife. The noise of the young ones might have been produced by at least five, so that I was full of great hopes.

The male is extraordinarily tame, and directly I go in to his apartment, he settles either on one of my arms, or shoulders,

or my head, and will devour mealworms, biting off their heads and squeezing out their insides! Then he chucks away the skin and greedily demands another.

On one of the last days in May, I again looked in, as the hen bird hardly ever appeared, and to my joy found two fine young birds, although I was a little disappointed that five of the eggs were unhatched. However, the two were really very fine and large, and completely feathered, looking like their mother in colour, but more washed out.

On the 3rd of June, the old birds were again seen in the act of mating, and the hen began to throw some of the refuse out of the nesting-box, so that I deemed it advisable to remove the young birds, which were still unable to fly, to a big open box with an inch of sawdust at the bottom, and put them quite low down, so that they would not be injured by falling, for I had visions of their being turned out by their mother and tumbling down ten feet on to a hard cement floor. When I took the young ones out, the male bird fussed round in a great stew, so that I felt confident that he would continue to feed them, although they would not be so very long before they fed themselves.

The parent birds have had an abundance of fresh grass seeds, dandelion leaves, etc., as well as gentles and biscuit sop, and if they are as proud of their young ones as I am, they must be very cock-a-hoop birds indeed! I have striven for nine years to breed these beautiful Parrakeets (Rose-throated Parrakeets as I like to call them!) and I hope I have at last succeeded.

If these young ones reach full maturity, they will be the first to do so outside Australia, as far as I know, but I do not think there is much doubt about it.

\* \* \* \*

The two nestlings left the box on the 6th of June, when they were probably nearly five weeks old. They can now feed off biscuit sop when it is held in front of them (9th June).

Their colouring resembles the adult female, except that the forehead is a mauve pink instead of pale blue, and the ceres are pale yellow. The rose-coloured throats are quite as brilliant as in the adult bird.

The parents are busy preparing for a second brood.

\* \* \* \*

On the 12th of June I removed the young birds to a cage in the house; as it was evident that, although they did not yet crack seeds, they could eat by themselves. For two days they were rather shy; but when hungry, would greedily devour biscuit sop from a spoon. By the 15th they were quite tame, and when let out of the cage would fly about the room, or perch on my hand, rapidly fluttering their wings for exercise, calling loudly at the same time.

One of them, if I offered him sop when he did not want it, would impulsively peck at my hand, plainly saying "take the stuff away." If they had been hatched in a wild state, they could not be better grown or more robust.

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## THE NAKED-THROATED BELL-BIRD— AND HIS BATTLES.

By REGINALD PHILLIPPS.

At page 191 of our May number, Mr. Harding refers to the untimely decease of his Naked-throated Bell-Bird. If my experiences are worth anything, the species is an easy one to keep in health so long as it is protected from the weather; should it, however, be subjected to the Fresh Air Treatment, which has been responsible for the death of not a few rare birds during recent years, it will assuredly betake itself off. In 1888, when I was more accustomed to British than to foreign birds, I received two examples—and each came to an untimely end through an overdose of fresh air.

My first was an adult male—white tinged with yellow. I suppose this yellow tinge, not very infrequent with Bell-Birds generally, is merely a stain? or is it a sign of age?

My second specimen, an immature male still in the green feather when received, arrived a month later. All through the summers of 1889 and 1890, sitting on a high bare perch in my garden aviary, this "Smith" (as he is called by some in his own country) lustily hammered away on his anvil each year until he fell into moult (August). And here I shall do well, I think, to exploit my wisdom, even at the cost of betraying my weakness,



by quoting Mr. Harding, as his language is more temperate than any I feel disposed to use on so sore a subject:—"The voice of this bird . . . was as music in my ears, but my neighbours took a less romantic view and heartily welcomed its untimely demise." He lived with me for over twenty-six months, but in 1890 was left out in the garden until too late in the season, caught a chill, and expired before the close of the year. *Both died of pulmonary consumption from over exposure.*

Not in any book of travels or natural history have I ever found a reference to the manner in which this species, and perhaps the genus, conducts its battles; and as it would be a sore loss to mankind were the treasured secret to go down into the grave with me, I will now divulge it, so that our Minister for War, even at this the eleventh hour, may know how to teach Young England how to fight.

No. 2, when received, was placed in a roomy six-foot-long cage, with a perch running down the centre from end to end, along with the first arrival. The birds took up their positions at opposite ends of the cage, and soon let it be known, both by voice and gesture, that neither was pleased at the presence of the other; but as each persistently turned his back upon the intruder—just to shew his contempt for the fellow, and as for the most part a clear space of nearly three feet was kept between the rival camps, their swellings and threatenings, although ostensibly very alarming, did not seem likely to result in broken bones; so I disregarded the warnings of impending disaster—and had to pay the penalty, as one so often has to when ignorance prevails.

In military tactics, a "strategical movement to the rear," although privately recognised, is publicly frowned upon; all the same, with Bell-Birds, a three-quarters movement to the rear seems to be the usual order of attack.

Moving simultaneously backwards, very slowly it must be admitted, from either end of the cage along the central perch, inch by inch, with many blusterings and blowings, bowings and scrapings, tail opposed to tail, and with heads as far removed from the danger zone as circumstances permitted, each with face slightly turned and with a wary wicked eye like to that of a kicking horse, they would near to within some eighteen inches

of one another, when one—with a horrible YOWL, which nearly scraped the hair off one's head, and adequately accounts for the absence of feathers on the throat of the species—would bound into the air and endeavour to come down on to the head or neck of his antagonist. But nothing came or seemed likely to come of all these yowlings and circus-jumpings, and space was scarce, so I still left them together;—and one day I found the old warrior in a heap on the floor of the cage in a state of collapse, with his white robe soiled and blood-stained. The young bird had at length succeeded in getting a blow in, and had inflicted not a trivial scratch but a really serious cut across the back of the head, at the base of the skull. Their movements at the climax were so rapid as to render it difficult to detect whether they struck with claws or beak, but I think that a side-cut with the sharp-pointed beak must have caused the wound.

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## A SMALL AVIARY FOR BEGINNERS: BEING A FEW HINTS ON CONSTRUCTION.

By W. H. WORKMAN, M.B.O.U.

I must start by apologising for this very feeble attempt to write about a small structure which I got my man to erect in our garden, where, I am sorry to say, space is rather limited; but the following notes, written round the photograph, may I hope help others like myself, unexperienced amateurs, to erect or get erected, a structure which will keep the birds in and water and mice out.

I have a great belief in making some sort of a drawing to work from; this is quite an easy matter, as it does not require any art, only common sense and ruled lines. The first thing to do is to measure your ground to see what size of an aviary you can put down; you will have to remember that your aviary will look ever so much larger in reality than on paper. So now suppose you have measured your ground and decided what size your inside part is to be and what size your flight. You will then be able to draw your ground-plan, after which you should draw an elevation or front view and then an end view. A tradesman will





SIDE VIEW OF AVIARY SHOWING FEEDING BOX.

be able to work from these drawings so that little time may be wasted, which means a saving to your pocket.

I first constructed my house, which is the covered part ; it measures 6ft. from back to front, is 4ft. wide and 7ft. height at back and 6ft. at front. In front I left space for a window, which is (as you will see from the photo.) about 2ft. by 1ft. 6in. This house was constructed of 3in. by 3in. posts with 3in. by 1½in. cross bars and covered with ¾in. tongued and grooved sheeting.

When the house was nearly finished I set it down firmly in its place, on a good bed of clinkers from the greenhouse furnace, then added more clinkers, made and laid down a thick cement floor. I also put cement round the outside to keep water and vermin from getting in. At the side of this house I left space for a door leading into the flight, which is clearly seen in the photo. also a small hole for the birds to get in and out during the winter, when I keep the door shut.

By this time you will be ready to start the flight, which I made 12ft. long by 6ft. deep, 6ft. high in front and 7ft. high at back. This was made of 3in. by 3in. posts tarred and driven firmly into the ground, the cross pieces and rafters are all 3in. by 1½in. I covered the roof four feet over the flight up to the middle post, thus giving a good outside shelter on wet and stormy days. I also carried a roof along the back of the open part, but only 14in. deep, to protect nesting-boxes, etc. The back was made of ¾in. tongued and grooved sheeting. All roofs and outside of house were covered with roofing felt and well tarred.

The floor of the flight was made of clinkers well hammered down, then covered with cement, having a fall towards the front of a few inches, so as to allow of the water running off, it also makes cleaning very much easier.

I now covered the flight with half-inch wire netting, and I must here mention an idea which I put into practice and found most useful in preserving the wire, for I noticed that the netting in our Tennis Club just lasted about three years, when it would be pretty well rusted away in spite of the galvanizing. I thought I would try varnishing, so I got some fairly good quick-drying

varnish and a big brush and went carefully over the netting; in a few hours' time there was a good coating of hard varnish all over, which most effectually kept the water from rusting the wire, and I find after five years the netting as strong as ever.

Painting was the next item on the programme. I heard that Distemper was the correct thing for an aviary, so I tried it, but not for long, worse stuff I never used, it washed off with the rain and rubbed off on one's clothes, so that I took to paint, in fear and trembling that the birds would eat it and die of lead poisoning, but they never looked at it and I have used paint ever since; it looks clean and is very easily renewed. For the inside I use white and the outside dark-green, which stands well.

I must say a few words about the arrangement I put up for holding seed hoppers; this, as you can see from the photo, is simply a box let into the house part with a door through to the front of the house so that it can be cleaned and new seed put in the hoppers from the outside without disturbing the birds in the flight, I put up a small piece in front of the box to keep the seed from falling on the floor of the flight, and above the door you will see I fastened a piece of rubber to keep the rain from working into the seed-box.

For water, I use white enamel dishes, which last well and keep the water clean and fresh. I always found that pottery ones grew a sort of green scum.

I have a big wooden tray for sand and broken up old mortar, which the birds seem to love and they are never tired picking amongst it; this I keep in the flight under the roof, so that it is well protected from rain.

My first year I started with four pairs of Green Budgerigars which multiplied tremendously; that season I think I had to dispose of between fifty or sixty young birds. They are a first-rate species to start on, as one does not get disappointed at the beginning—disappointments and deaths with come quite soon enough later on with other species.

I now have an addition to my aviary at the other end, in which I have a pair of Californian Quails. Last season they laid about forty eggs but would not take the trouble to sit, I am afraid they are just going to do the same this season too.

I hope the above notes will be of some use to those who, like myself, have had no experience of aviary-building, and if I have not made myself clear on any point, I will be glad to answer questions of persons in difficulty. I should like very much to have an aviary like the Western Aviary at the Zoological Gardens, London, where the mixed out-of-door collection is kept; the shelter being all behind with about half-a-dozen good flights in front, this seems an ideal plan for an unheated aviary.

I should be very glad of information about the nesting of Californian Quails. Is it possible to get them to sit, and would they live peaceably with other species of Quail?

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## BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

In the new Summer Aviary the birds have so far nested well. Tinamous, both Rufous and Martineta, have laid very freely and we have several young birds. We have taken the first clutches of eggs and are rearing the chicks under hens. They require a considerable amount of animal food, but seem easy enough to rear in this way. They resemble their parents very closely when quite young, the young Martinetas having a very well developed crest on the head. The eggs are most beautiful objects with a surface like glazed china, those of the Rufous Tinamou being a rich chocolate colour, while those of the Martineta are grass green.

Bronze-winged Pigeons have reared one young one and are sitting again, while a pair of White-fronted Jamaican Doves have reared a fine pair of young birds. A pair of South American Scaly Doves are sitting.

The most important event in this aviary, however, is the nesting of the Himalayan White-throated Ground Thrushes (*Geocichla cyanonotus*). The nest, much like that of a Blackbird, built of hay and roots, was placed in a privet-bush about four feet from the ground. Two eggs, also very much like those of a Blackbird, were laid, the young being hatched and successfully reared. When they left the nest they were dark brown in colour

but showed some grey on the back, and orange-coloured tips to the breast-feathers. Moreover, the brown and white streaks on the cheeks, so conspicuous a feature of the adults, is visible in the young. The old birds have repaired the nest and laid two more eggs. Grey-winged Ouzels have reared two young birds, and Scarlet Tanagers have two strong young ones in a nest *on the ground* amongst the long grass.

Californian Quails have laid and we have hatched half-a-dozen chicks under a hen, which so far appear to be thriving well.

In the Eastern Aviary, a young Brazilian Cariama, hatched on June 21st, is doing well. Two young birds were hatched, but the second was found dead in the nest the day after hatching. It will be remembered that we reared one young bird from the same pair of Cariamas last summer.

From our stock of North American Wild Turkeys, the four hens of which were reared here last year, we have had a good number of eggs this year. We sold over forty and retained a few, from which we have hatched twelve chicks, quite enough to rear on our limited space.

I was hoping we might this year have bred the rare Orinoco Goose, of which we have two males and one female, but the pair have not nested. The odd male was paired to a female Egyptian Goose, which laid two eggs but would not sit. These two eggs were put into an incubator, and one hatched and was given in charge of a Silkie hen which is rearing the little gosling well. It is much like a young Sheldrake at present, and it will be interesting to see how it turns out. The Egyptian Goose has just started to lay again.

From eggs very kindly sent us by a Fellow of the Zoological Society we have hatched fourteen young Tufted Ducks, which are growing well and spending most of their time diving for food in one of the small ponds.

The most important arrivals for the month are contained in the collection presented by the Government of the Federated Malay States. Some rare Pheasants have come—a pair of Argus, two pairs of Rufous-tailed Firebacks (*Acomus erythrophthalmus*), a Crested Peacock Pheasant (*Polyplectron bicalcaratum*), a pair



of real wild Red Jungle-fowl (*Gallus gallus*), a pair of rare Long-billed Francolins (*Rhizothera longirostris*), some rare Tree-Partridges (*Arboricola charltoni*) and Crested Wood Partridges (*Kollulus roulroul*); a pair of Javan Pea-fowl, a hen Parrot Fruit-Pigeon (*Osmotreron vernans*), some Green-winged Doves, Blue-Crowned Hanging Parrots and a Malayan Fishing Owl (*Ketupa javanensis*).

The Duke of Bedford has deposited with the Society a pair of the rare and very beautiful Ocellated Turkeys (*Meleagris ocellata*).

Mr. Frost recently arrived home from India with a large collection of rare birds, from which we have acquired by exchange a pair of very fine Chestnut-bellied Rock-thrushes (*Petrophila erythrogastra*), and a pair of Brown-backed Robins (*Thamnobia cambaiensis*), both species being new to the collection.

D. S.-S.

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## THE COUNCIL'S RECEPTION OF MEMBERS.

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Favoured by a fine sunny afternoon, the Council's Reception of Members of the Avicultural Society held in the Zoological Gardens on Friday, June 21st, was, in every way, a success.

In the absence of the President, Canon Dutton, and of the Vice-President, The Duchess of Bedford, who were unfortunately unavoidably prevented from attending, the guests were received by Mr. H. D. Astley and other members of the Council. Tea was served between 4 and 5 o'clock on the sheltered lawn at the back of the Fellows' Tea Pavilion and members dispersed afterwards under the guidance of Mr. D. Seth-Smith, Mr. R. I. Pocock and Mr. J. L. Bonhote to inspect various aviaries and interesting birds in the Gardens.

In addition to the Members of the Council already mentioned there were present:—Miss Alderson, Mr. and Mrs. Beebe (from New York), Mr. C. Box, Miss Chawner, Mrs. Connell, Mr. C. Dell, Mr. Goddard, the Rev. and Mrs. Walter Gregory, Mrs. Hartley, Mr. Hopson, Miss Lee, Mr. Meade-Waldo, Mr. T. H. Newman, Mr. Ogilvie Grant, Mr. A. Pam, Mr. W. T. Page, Mrs.

R. I. Pocock, Mr. Rathborne, Mrs. Seth-Smith, Mrs. Staveley Hill, Lord Tavistock, Mr. B. Thomasset, Mr. S. M. Townsend, Mr. Trevor-Battye, Mr. and Mrs. Williamson Wallace, and others. Dr. A. G. Butler, Mrs. Currey and one or two more, who intended to be present, sent messages expressing their regrets at being prevented at the last moment from doing so.

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## THE SOCIETY'S MEDAL.

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Mr. Astley is apparently entitled to a medal for successfully breeding the QUEEN ALEXANDRA PARRAKEET. Should any Member know of a previous instance of this species having bred in this country will he kindly communicate with the Hon. Sec.

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## CORRESPONDENCE, NOTES, ETC.

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### NOTES ON THE SUN-BITTERN.

Sir,—May I be pardoned for exposing further ignorance and for asking the following question?

Is it usual for birds to try to remedy defects in the condition of their beaks by the means which I, to-day, observed the Sun-bittern in the Western Aviary of the Zoo to be employing?

The nether mandible has, apparently, received some slight injury, and the upper one protrudes about a quarter-of-an-inch more than it ought to. *Eurypyga helias* was squatted down in the front of the flight and was pushing his beak backwards and forwards along the metal ledge, at an angle which just prevented contact between the lower mandible and its surface. Having done this for some considerable time, he scraped the point of his beak in the gravel, in an almost vertical position; and these movements he continued, alternately, for quite six or eight minutes after my advent.

The ledge, being of iron, is so smooth that very little, if any, success can attend the one effort; the gravel being soft, but little can follow from the other: and so it is probable that others will have noticed repetition of this very intelligent attempt on the part of a very strange bird to "strop" his beak back into shape. What I should like to know is, whether his method is one which is recognised.

ARTHUR DENMAN.

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## REVIEWS.

## FAMILIAR INDIAN BIRDS.\*

That this little work now appears in its second edition is evidence that the first has been appreciated by the Indian public; it deals with a number of the familiar species of the country, and contains a certain amount of original observation. The selection of species is not always of the most judicious, and the treatment rather uneven; it seems, for instance, in a book for beginners, rather unnecessary to go into details about the different species of Terns in a work in which the very common Red-vented Bulbul and House-Mynah, though dealt with, are not even described. The Sparrow is not honoured with a notice, though mentioned casually, and the common Kingfisher finds no place; yet local races of these two well-known British birds, one so despised and the other so admired, are certainly familiar birds in India. That they *are* well-known here too can hardly be the author's reason for slighting them, because he gives full notices of the common Coot and Moorhen, without descriptions, though a friend of his mistook Moorhens for ducks, which looks as if description were necessary!

The book, though interesting, as most books on Indian birds are at present when so comparatively little has been written popularly on the most interesting avifauna in the world, is, as a matter of fact, distinctly slipshod in treatment; nor are the references to authorities indented upon so full as might be fairly desired.

F. F.

## THE FLIGHT OF BIRDS.†

When we consider that Flight is one of the main attributes of birds, and the one to which their whole structure has been co-ordinated, it is perhaps strange that ornithologists have very largely neglected to study the method by which they are able

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\* *Familiar Indian Birds*, by GORDON DALGLEISH. Second edition.  
London: WEST, NEWMAN & Co., 1909. 2/6.

† *The Flight of Birds*, by F. W. HEADLEY, M.B.O.U. 8vo., 160pp., with 16 plates and many text figures. London: WITHERBY & Co. 5/- net.

to accomplish their aerial evolutions. In the work before us, Mr. Headley has attempted, and very successfully, to supply this deficiency, and throughout the book he has avoided as far as possible the deep mathematical and dynamic problems which underlie the subject, and has expressed in clear and straightforward language the methods by which flight is accomplished.

The bird, as he points out, must be considered as a highly efficient aeroplane, and the difficulties which Nature has had to overcome are precisely those which are at the present day confronting the human aviator. By a careful study, therefore, of a bird's methods and structure the airman can most surely discover the problems that he himself has to face, though in all, save the essentials he will have to overcome them by different methods. Mr. Headley has borne this fact in mind and has arranged his book accordingly; the first three Chapters deal with Gliding, Stability and Motive Power, after which follow chapters on Starting, Steering and Stopping. The latter half of the book treats of the subject rather from the bird than the airman's standpoint, and we have notes on the Structure of Birds, Varieties of Wing, Rate and Duration of Flight, and finally the very important effect of Wind and the various ways by which it is turned to account. In a book so excellent of its kind there is but little to find fault with, and our criticisms, such as they are, are mostly matters of opinion. We cannot for instance agree with the author when he claims that the relative shortness of leg among the larger birds has probably been a factor in keeping birds, as compared with mammals, comparatively small. The Flamingo, a typical long-legged bird, rises from the ground with difficulty, while several non-fliers have long legs. Our idea roughly has always been that the power (muscles) required to raise a large bird must of necessity be so large (*i.e.* heavy) that a limit of size is soon reached, and to our mind a proof of this lies in the fact that the largest birds, *e.g.* Ostriches, Rheas, etc. are flightless. Helmholtz formulated this idea, and Mr. Headley, without in our opinion sufficient reason, rejects it. With regard to the Velocity of Flight, Mr. Headley is cautious, and at the most allows an *unaided* flight (*i.e.* unaided by wind) of about 50-60 miles per hour, though he gives the record of a Swallow that

maintained an average pace of 106 miles an hour for 160 miles. As to the power of duration, a continuous flight of between 16 or 17 hours is quoted, but here again the author implies that this would be exceptional. We know, however, that in the 'Tippler' a breed of Pigeons, the record flight for old birds is over 18 hours and for young birds nearly 16 hours, and in the former case they were called down at dusk and did not stop from exhaustion. These points, however, are merely matters of opinion, and the author is probably wise in keeping well within the mark.

The book is so moderate in price and contains such a wealth of new matter that it should have a ready sale amongst the public, airmen and ornithologists.

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#### BRITISH WARBLERS.\*

Mr. Howard has made himself master of the habits, more especially during the courting season, of one of our most interesting groups of birds, and the results of the small habits and actions so carefully recorded, form a foundation on which more generalised work in the future may follow. The habits and courting measures of birds have been much neglected by the orthodox ornithologist, and yet, in the bird's economy and in the evolution of the different species, they must have played a part as important, if not more essential, than the various differences of form and colour. The book is carefully and well written and forms most interesting reading for bird-lovers as well as for those who take ornithology more seriously. The species dealt with in this part are the Willow, Savi's and Rufous Warblers. We have nothing but praise for Mr. Grönvold's plates, the actions and positions being taken from the author's sketches. They are unique in the positions they illustrate, but to anyone who knows his birds they are obviously truthful.

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\* *The British Warblers*, A history with problems of their lives, by H. ELIOT HOWARD, F.Z.S., M.B.O.U. Illustrated by HENRIK GRÖNVOLD. Pt. 6. 4to.  
London: R. H. PORTER. 21/- net.

## A HANDLIST OF BRITISH BIRDS.\*

The numbers of rare stragglers recorded from our shores has, owing to the attention given to the subject by many collectors and ornithologists, increased so considerably of late years that we welcome with pleasure Messrs. Witherby's List, which brings all these scattered records together; it also, as the authors belong to the latest and most advanced class of systematists, includes under a different heading all the different races of the same species, which have occurred in our islands. From these two points of view alone, this little volume will prove most useful and acceptable to British Ornithologists generally. We may not individually all agree as to the merits of certain races to subspecific rank, but no one will deny the advantage of having these various races clearly set out in a List like the present, our only regret being that the distinguishing characters of the different races are not given as well. We are quite aware that this book is intended only as a List, but as space is found for Distributional and Migrational notes a couple of lines giving the main characteristics of the different subspecies would have rendered the book still more complete and useful. The notes on the Distribution, both in the British Isles and Abroad, as well as the Migration notes, are extremely well and concisely written.

This book, however, was mainly written with a view of advertising and popularising the names, many of them new, that should be borne by our native birds under the new international Code, to criticise these names in detail in our journal would be out of place, but we must say that some of the names appear to us to have been needlessly changed, while the alteration of others, such as the transference of the name *iliacus* from the Redwing to the Thrush, and *musicus* from the Thrush to the Redwing is likely to lead to confusion rather than to uniformity and clearness. On this nomenclature question we have, however, a complaint against the authors. The International Committee, whose work they uphold with so much enthusiasm, is

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\* *A Handlist of British Birds* with an account of the distribution of each species in the British Isles and Abroad, by ERNEST HARTERT, F. C. R. JOURDAIN, N. F. TICEHURST and H. F. WITHERBY. 8vo. 237pp. London: WITHERBY & Co. 7/6 net.

not the first body that has attempted a Code of Nomenclature. It is hardly fair or just (as far as Britain is concerned at all events) to say in the Preface 'we have neglected for more than 150 years one of the requisites of greatest importance' (*i.e.* a Code of Nomenclature. In 1842, the Stricklandian Code, drawn up by an influential Committee of the British Association, was first published. It contained a code of rules which does not greatly differ from the present rules of the International Committee, save that the 12th edition of Linneus was taken as the starting point instead of the 10th as at present agreed upon. It is, therefore, obviously unfair to entirely ignore the labours of these earlier, but not necessarily less able Zoologists.

We come yet to another point. After the publication of the Stricklandian Code the names of the greater number of our British birds became fixed, and it is, therefore, in our opinion, inadvisable to change names that have been in existence for over half-a-century or more, when the assumption of the suggested name is founded on a matter of opinion rather than priority. We will just take one case to illustrate our point. During the latter half of the 18th century the Hen and Montagu's Harrier were considered the same species, but the females were thought to be a different species from the males and known by the name of the 'Ringtail' Hawk. Albin figures a Ringtail on which figure Linnæus bestows the name '*pygargus*.' Early in the 19th century Montagu, a keen and critical ornithologist, discovers that the so-called 'Ring-tail' is only the young male or female of the 'Hen Harrier.' A discovery, by the way, which was brought about by keeping them in confinement. He also discovers that there are two species, now known as the Hen Harrier and Montagu's Harrier, and he names the latter *cineraceus* and considers *pygargus* as being a female Hen Harrier. According to the Rules, both of the Stricklandian Code and of the International Committee, if Albin's plate can be proved to be a picture of the female Montagu's Harrier '*pygargus*' must stand for that species. Half-a-century ago, Prof. Newton and others carefully went into the matter and decided that *pygargus* did not refer *solely* to a female Montagu's Harrier, and, therefore, could not be used for that species. In our opinion, this matter

having been settled by the highest authorities of the time, might have been accepted without further question. However, it was not, and their decision is reversed apparently because Albin's figure is that of an *English* bird. As both species bred in England in those days, we fail to grasp the significance of the reasoning, but the fact remains that a well-established name has been upset, a fact which of itself must lead to confusion.

Possibly the next generation may ignore this work as they have ignored (in print at all events) the work of the last century, and there will then be a further reversal of names. Apart from the nomenclature, which after all is ornithologically but a minor part of the book, we have nothing but praise for this handy manual, which in bringing our present knowledge clearly up to date, will prove of inestimable service to all working British ornithologists.

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## PRACTICAL BIRD-KEEPING.

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### XVII.—WADERS.

By C. BARNBY SMITH.

Those small marsh or sea shore birds popularly known as "Waders" are, I think, very interesting in many respects, but in this beyond all, that they, with a little difficulty, may have their enclosure so arranged as to make a pleasing little picture in the garden—a thing that cannot be done with many other kinds of birds. Water, of course, is a necessity, but this need not be in great volume if it is kept fresh. My own arrangement as regards water for my small Waders' aviary is a little pond formed by a concrete bed about 5 yards by 3 yards edged with brick cemented walls about 3 feet high, the top of the walls being below ground level. The bottom of this little pond I covered with earth and sods to an average depth of about  $1\frac{1}{2}$  feet, sloped the earth outside the pond in banks down to the top of the walls, covered the top of the walls with sods of coarse growing grass, planted rushes, flags, and semi-aquatic vegetation in and around the pond (making one miniature island in addition), with the result that the fact that the pond is artificially constructed is by no means



apparent. The water is supplied by pipe just above the level of the walls, and as the adjoining soil is gravel and sand I merely turn on a tap outside the aviary for a short time every few days and let the pond overflow and the surplus water drain away into the surrounding soil.

Near the pond are a few square yards of sand, which is kept fresh by raking and a fresh sprinkling of sand given weekly. In one corner of the aviary is a little shelter shed open on two sides and with a couple of rhododendron bushes in front so that it is hardly seen. In another corner near the water level is a small area of mud, in which the birds like to dig. Outside the aviary on two sides are privet hedges to afford shelter from rough winds and the other two sides are pretty well sheltered by distant bushes.

All Waders like to have a great deal of sunshine, and a South aspect is most desirable. Both in winter and summer the birds may be constantly seen basking in the sunshine after feeding. The aviary should be of  $\frac{3}{4}$ -inch mesh wire netting let into the ground one foot and turned horizontally outwards at this depth for another foot so as to keep out rats. The supports for the netting should be of iron tubes so arranged as to be as little visible as possible. A few creepers up the iron supports help to conceal them. It is also a good plan to plant several clumps of tall growing iris, ribbon grass, etc., close to the wire netting both inside and outside. This helps to hide the netting and gives a pleasing effect.

As to Waders themselves, the great difficulty is to "get them started." They usually arrive from netsmen or dealers in poor condition—sometimes frightfully thin—and with feathers all dirty through lack of access to water. Even if half-dead, the birds will attempt to wash themselves, and as the feathers usually under these circumstances fail to turn water the birds will look "like drowned rats" every time they get wet and die in a week or two, sometimes sooner. Then there is the question of getting fresh caught birds to take artificial food. My plan is to put such birds, in the first instance, by themselves in a covered enclosure protected from wind and rain and only let them bathe for a short time once a day at first. The water is taken away if necessary.

I feed them on worms and maggots for the first few days, then mix chopped worms and maggots amongst the artificial food so that the birds get use to the latter gradually, and in the course of a week or so are ready to turn out into the Waders aviary with old established birds.

As to food for small Waders when established, I give in the morning bread and milk with small pieces of raw meat amongst it. In the afternoon the food is Victoria poultry meal with shrimps softened in boiling water and *chopped small*, or mussels according to season. I also have some dari or millet thrown down on the sand, and some birds (especially Knots) are very fond of this. Boiled rice is also very good. My Whimbrel, glossy Ibis, and some Rails, which live in another enclosure, have for years kept in splendid health on an exclusive diet of boiled rice and raw meat mixed. It is good to keep fresh water shrimps, water snails, etc., in water to which small Waders have access, as even if the birds only get a few of these the constant search to which they are tempted is good for their health. Indeed, there is very soon a material difference in health between those birds who are constantly employed searching for food and those that have no incentive to do this.

A great trouble with newly-caught Waders is to get them to moult properly. Good general health, of course, induces this, but I am satisfied that hot sun and warmth are advantageous, and indeed are a material factor in the case. Some of my birds this spring have assumed better breeding plumage than ever before and I quite think this is due to the abnormally hot summer last year.

If birds arrive with clipped wings (as they often do) it is well to presently pull out the feathers that have been cut, otherwise these feathers will not moult properly. Care, however, should be taken not to pull out many feathers whilst birds are in a weak state.

As to the different kinds of birds to keep—the bird of all others for the beginner is the Arctic Knot. They are cheerful and in good feather under almost all conditions and their quaint croaking cry is a pleasant reminder of the sea shore. Next to these should come Ruffs and Reeves. The antics of the former

never fail to elicit amusement from one's friends, and Reeves are very dainty and elegant little birds. Oyster-catchers are easy to keep but very nervous. Their long beaks are apt to split, and when this happens the bird must be caught and the beak carefully pared. Godwits are not difficult to keep when once established. The Black-tailed is in my opinion far more desirable than the Bar-tailed. Turnstones are not easy to obtain, but are most striking in breeding plumage, and their habit of continually turning over stones, etc., in search of food, is very amusing. I find them quite easy to keep, fed and treated as above indicated, but cannot say the same of Ringed Plover, Dunlins and Sanderlings, which probably require more varied diet and closer attention than I can give—anyhow, they do not thrive permanently with me. I say "permanently" because it is quite easy to keep these small birds for a few weeks or months, but as they then usually get out of condition they cannot be regarded as satisfactory inmates of an aviary such as mine. Golden Plover and Grey Plover are not difficult to keep, but the Lapwing generally gets out of condition and in my opinion it is cruel to attempt to keep it in a small enclosure. The same remark does not apply to its relative the spur-winged Cayenne Plover of America, which gives me no difficulty in a small enclosure. It is, however, a very fierce bird at times. I see that a few years ago I wrote to the *Avicultural Magazine* urging the claims of the Avocet as the most charming of Waders. Wider experience (not my own only) has led me to believe that until we know more of their needs it is useless to try and keep these delightful birds. I am well aware that now and again Avocets are successfully kept, but the percentage of failure is enormous. Redshanks are more delicate than many other birds and are apt to moult badly. One of the most desirable birds for a small Waders aviary is the Allen's rail. It is, however, apt to catch cold if allowed to roost out of doors in severe winters. The Martinique Rail is also a charming little bird, but not so elegant. The common English Water-Rail I have found quite easy to keep, and it looks quite in place sneaking between clumps of rough grass by the water's edge. The Australian Pectoral Rail if kept with small birds should be watched closely, as it is apt to be

a bully. It gives, however, no trouble in itself, and at present I have a pair nesting. Red-necked Phalaropes I have only kept a short time. I brought some from Iceland a few years ago to give to friends, whilst with me, the birds flourished on maggots and were tame beyond belief. I would strongly urge on lovers of small Waders the desirability of having red-necked Phalaropes, which are not so difficult to obtain as is sometimes supposed. Not many people have practical experience of them, but I have known one live for two months kept in a large bedroom in a house in the North of Iceland. In the end I believe it was killed by accident. When I saw it, it was running about the floor apparently quite contented. Snipe and Woodcock give infinite trouble and are very difficult to keep in captivity. They should only be attempted by experts.

If anyone could give the space, a good way to keep Waders would be to have one large aviary for marsh birds, another large aviary for sea-shore birds (imitating natural conditions so far as possible in either case), with several smaller aviaries in which to put birds from which it was desired to breed. Where many birds are together in one aviary they usually disturb one another at nesting time. I have had, within the last four years, two Reeves' nests spoiled from this cause.

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### NEW MEMBERS.

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- Mr. JEFFREY WHITEHEAD, Mayes, East Grinstead.  
Mr. S. ARTHUR PEGG, c/o S. PEGG & SON, Alexander Street, Leicester.  
Mr. HENRY MUNT, 10, Ashburn Place, S. Kensington.  
Mr. C. BOWDEN KLOSS, Perak State Museum, Taiping Perak.
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### CANDIDATES FOR ELECTION.

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- EVELYN, DUCHESS OF WELLINGTON, West Green House, Hartley Wintley,  
Winchfield, Hants.  
*Proposed by Mr. HUBERT D. ASTLEY.*  
LORD TAVISTOCK, Woburn Abbey, Beds.  
Mr. EVAN FREDERICK MORGAN, 37, Bryanston Square, W.  
*Proposed by Mr. R. I. POCCOCK.*
- 

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# AVICULTURAL MAGAZINE.

Edited by J. LEWIS BONHOTE, M.A., F.L.S.



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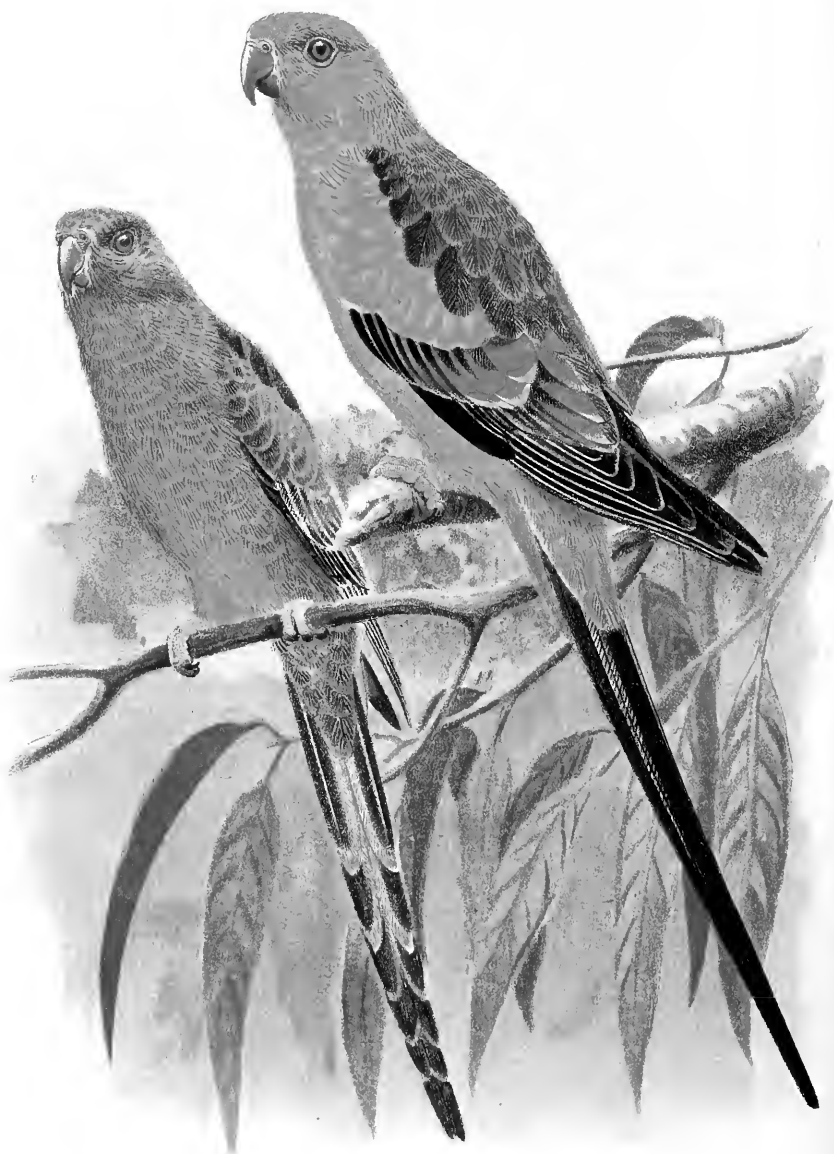
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THE ROCK PEPLER PARRAKEET.  
*Polytelis melanura.*

# Avicultural Magazine,

BEING THE JOURNAL OF THE

AVICULTURAL SOCIETY.

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AUGUST, 1912.

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## ROCK PEPLAR PARRAKEETS.

By Miss PEDDIE WADDELL.

I have received your note asking me to send some account of my pair of Rock Peplar Parrakeets. I am very pleased to hear they are to be in the Magazine soon, but really I do not know very well what to write about them.

I got them from Mr. Hamlyn about four years ago when they were both in immature plumage, the only difference in the cock bird being his larger size and his longer tail, but gradually as year by year they moulted, the cock bird became more and more yellow, until last year he really was perfect, and when I exhibited the pair at the Scottish National Show in December I was more than disappointed to find that they had only gained second prize. They made splendid show birds, as they were really very tame and did not mind being in a small cage. Usually I kept them in as big a cage as I could—6ft. high by 3ft. square—and they seemed very happy. They had the usual Parrakeet seed with green food when I had any.

This spring I noticed that the hen was a great deal in the nest box and that the cock was constantly feeding her, but of course, in the limited accommodation I could give them, it was hopeless to expect any results, so when Miss Clare at Wimbledon wrote asking me if I would part with them, I almost considered it a duty to let them go, where, with the fine aviaries she has, there was every chance that they would nest successfully. Now, since Australian Parrakeets are so scarce, I think aviculturists should do all they can to assist the breeding of these rarer

species. With great regret I sold the Rock Peplars, and I am hoping to hear that Miss Clare is successful in rearing some young ones.

---

## LUCK IN BIRD-BREEDING.

By Dr. A. G. BUTLER.

It is a fact too certain to be disputed, that whereas one bird-owner may repeatedly try year after year, without success, to breed birds both in cages and spacious aviaries (adopting every approved method and using every appliance calculated to induce his birds to go to nest) another owner, having no special knowledge and taking no means whatever to attain his object, will discover even such shy breeders as Waxbills bringing up a family of youngsters in some most unsuitable receptacle fixed up in a Crystal Palace cage standing upon a table in a dwelling-room.

At one time I had practically eleven aviaries and about sixteen large flight-cages; I did everything I could think of or that any of my experienced avicultural friends could suggest to induce my numerous birds to breed, but my success was never very brilliant, although in the case of a few common species I had no cause for complaint, since I had to give away or sell many of the young in order to avoid overcrowding.

During the last few years I have not felt justified in replenishing my stock of birds, and therefore have devoted much of my time to my old hobby—floriculture. My feathered family has slowly dwindled to about a seventh of its former size, the survivors being mostly more or less ancient, and all, as I supposed, probably past the breeding age.

Towards the end of May a lady informed my son that she was giving up her present house and did not wish to keep her birds, which consisted of one cock Canary, two cock Budgerigars and two Java Sparrows and she wished to know whether I would accept them: I said O'yes. they would give no extra trouble, as I should turn the Canary into my Finch aviary and the others into one opposite, in which my last surviving Java Sparrow still lived.

The day after I had let these birds fly, I observed a hen which I take to be the St. Helena Seed-eater (given to me by

Lieut. Horsbrugh in November 1906) carrying about a piece of dead grass: I tore up some fibrous loam and threw the dry roots into the aviary and the bird constructed a flimsy nest which she failed to line although I gave her plenty of soft material which she managed to waste, and when I put a lining into the nest she pulled it all out. The nest, such as it was, was placed in a sponge-basket hanging on the wires at the back of the aviary and three eggs were deposited upon the wicker bars of the basket, there being no bottom to the nest. One egg hatched about thirteen days later, and as food for the young one I daily put in a saucer containing some of the soft mixture prepared for my Insectivorous birds; with this and a little chickweed the Canary fed the mother, who afterwards attended to the youngster.

On the 11th June, in the aviary opposite, I saw a Chingolo Song-Sparrow, sent to me by Mr. Teschemaker on October 30th, 1907, courting a hen Tree-Sparrow given to me by Mr. Allen Silver about a year later. The two birds behaved in every respect like a pair of House-Sparrows, which is rather remarkable if the Song-Sparrows are actually Buntings, as Dr. Sharpe decided that they were. Unfortunately Tree-Sparrows are so hopelessly wild, even after years of captivity, that not the slightest attempt was made even to collect materials for a nest, and if eggs were laid no sign of their existence could be discovered.

On June 22nd the Canary hybrid left the nest in excellent health and plumage; it much resembled its mother in general appearance.

On June 26th the Seed-eater again began to carry about building materials, and on the following day she began to line a cocoanut-shell fixed on a dead fir-tree in the aviary; as before she proved a very poor architect and when she began to sit on July 2nd there was hardly any building-material in the shell.

The eggs of this bird are pure white with a few small blackish spots at the larger end; they differ at a glance from those of the Green Singing-finch which are cream-coloured, broader, of a less true oval shape and rather more numerous dotted with blackish: in fact (excepting that they are much larger) they resemble those of the Grey Singing-finch, which the St. Helena Seedeater also resembles in its less frequent and

more powerful song: it seems odd that two birds differing greatly both in size and colouring should agree closely both in their eggs and their vocal performances, but colouring does not appear to be much test of affinity: I have no doubt, from a study of Rose-finches in captivity, that they are much more closely related to the Serins than to the Bullfinches: their fugitive colouring also is less characteristic of the latter than of the Linnets, which again seem nearly allied to the Serins.

So far as I could see into the nest, the second clutch consisted of two eggs, upon which the mother at first sat very unsteadily, flying off at once if one looked at her from the outside of the aviary: later she became much more steady, which inclined me to hope that the eggs were fertile: however, they did not hatch, and as the bird continued to sit I examined the nest on July 21st and found two clear eggs which of course I took away.

Now if I had been a lucky breeder I should have had a nest of hybrid Sparrows and two full nests of hybrid Canaries instead of getting only one (probably hen) bird from the two pairs: yet breeding is not altogether a toss-up, and I do not doubt that much of my want of success was due for many years to the fact that my aviaries were overcrowded, though it cannot be denied that in some overcrowded aviaries most satisfactory results have occasionally been attained.

Perhaps it has been better for aviculture that I have not been a very successful breeder: if I had been, perhaps I should have been content to record my experiences in a series of short scattered articles, instead of bringing out text-books collating the information acquired by the experience of workers throughout Europe during the past century. No doubt there is some truth in the old saying that "whatever is, is best."

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## BREEDING OF HYBRID COCKATOOS.

By R. COSGRAVE.

One of the most interesting events here this summer is the nesting of a female Greater Sulphur Crested (*Cacatua galerita*) and Rose-breasted male Cockatoo (*C. eos*).

Last autumn these birds were given full liberty owing to their untidy and destructive habits. During the first week of liberty they were very shy and wandered about a good deal, eventually coming back to their old home for good, and settled down in the immediate neighbourhood, amusing themselves amongst the trees, whose softer parts came in for a good deal of attention. During last winter a large walnut tree, within twenty yards of the aviary, took their fancy more than any other, and in this they set about in earnest to build a home. None of the many holes in this tree were large enough to admit them; so selecting one, a little more than half way up, they worked away at it in turns, until a good-sized comfortable abode was ready. The amount of chips they ejected was astonishing, amounting to several bucket-loads, to the horror of the gardener, who declared they would kill the tree and ought to have their necks twisted; it was good going and did not take very long as this particular bough was more or less decomposed. The way in which one worked while the other rested close by was especially noticeable.

During the last week in March we noticed that the two birds did not come to feed together as usual. I suspected that they had a nest and kept a sharp look out, but neither of the birds would go near the tree while anyone was about who would be likely to see them. Taking cover within sight of the tree, I was rewarded after a long wait to see the male come on one of the outer branches; he had a good look round to see that there was no one in sight, dropped quietly close to the nest and looked in, a hasty whisper and out came the female who went straight away to the food-pan, the male at once took her place on the nest. By this behaviour I was quite sure that the nest contained eggs; after a few more days the birds did not mind in the least who saw them visit the nest. When three weeks had passed, by means of a long ladder, we had a look in the nest and were

pleased to see one young bird, recently hatched, probably three or four days old, and one unhatched pure white egg, about the size and shape of the Eagle Owl's (*Bubo maximus*).

The youngster's head and neck was quite nude, its body was covered with short, whitish down, and it was apparently a healthy bird; in case of causing harm no time was lost in getting down and removing the ladder out of sight, as the old birds were in such a state of mind at our presence. On May 29th the youngster left the nest, but was not seen until the following day, being cunningly hidden in a large Beech tree, right away from the nest; when discovered it was sitting with the parents, one on each side. It looked fully developed and about the size and shape of the male. Wings, tail and mantle a light grey; head, neck and all under parts sulphur, with the exception of a salmon-coloured patch on each ear about the size of a sixpence, and a dash of grey on the crop, neatly blended with the prevailing sulphur-colour; eyes, black; bill, light horn; feet, brown; crest, short, extending only to the nape; colour, a mixture of sulphur and light rose; when on the wing more rose colour is noticeable than when the birds are at repose. The parents are very devoted to it; they feed from the crop, and when doing so like to stand on a bough or twig, over the youngster. We give them filberts, walnuts, monkey nuts, maize, wheat and bread daily, besides this they find a good deal of natural food, paying several daily visits to a Lucerne field three-quarters-of-a-mile away. I cannot say what they brought, as a good crop of various weeds are in flower on this particular field.

On June 1st all three birds returned to the aviary and sat on the highest part. The surprise of the youngster's first sight of the inmates was amusing. I believe it thought that the Night Herons and Laughing Jackass were his brothers and sisters, they certainly appealed to its curiosity the most; the amusing part of all was to watch the old birds trying to drive away the other birds who persisted in having nests in the same tree. First of all were a pair of Indian Green Parrakeets, whose young we expect to see emerge daily; then a pair of Stock Doves, a pair of Jackdaws, and last, four pairs of Starlings. I shot the Jackdaws as soon as I possibly could; all the others were success-

ful in bringing off their young, with exception of the Parrakeet. The Cockatoos are much too clumsy to cope with these birds amongst the branches and the holes were too small to admit them to follow up the attack. Latterly they gave up this game as useless, and were content with sitting still and making use of strong unparliamentary language.

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## WOOD OWLS.

*Syrnium aluco.*

By KATHARINE CURREY.

In a little article entitled "Pet Owls" in the January number of the *Avicultural Magazine*, I mentioned the accidental escape of one of my pair of Wood Owls from its aviary, and although all the means we could think of were taken to entice it back, it never re-entered the cage, or if it did, it flew out again. A Wood Owl has visited the deserted mate constantly since then, sitting in the yews overhanging the cage and calling, and I think it is probably, the mate. A sequel to the little episode has happened since then that may interest those who keep Owls.

It chanced that I left home some weeks after the Owl escaped, and on the very day after my departure, a Wood Owl made its way into the aviary by burrowing under the wire on the ground. Of course, it was assumed to be the lost pet and the good news was sent to me forthwith.

But on my return I found it was not the lost mate, but a stranger, and very young and wild. I watched it for a few days, but as the deserted Owl took no notice beyond snapping at it with a very bored expression, I let it fly. My poor Owl, meantime, looked so dull and forlorn that I began to wonder if it would like a companion, and whether the presence of another Owl in its cage might have the effect of bringing the old mate back into the aviary.

About that time I chanced to hear of three Wood Owls wanting a good home. Two were hand-reared, and thought to be a pair, though the owner was not sure about it, or of the sex of any of the three, while I was equally in the dark as to the sex

of my Owl. I still watched and waited, hoping against hope for the missing mate to come back, but in vain, so I got the three trusting that one of them might take to my Owl and my poor Owl to it, and turned them out into the vacant division that had been wired off to tempt the deserter back. Its mate sat in solitary state next door. The new comers proved to be two different kinds of the Tawny Owl; two very large, with darker brown markings, the arrow-tips very clearly defined and the white conspicuous; the third, a smaller Owl, had yellower-brown plumage, and the markings were more blurred. They were all very tame, and at once took to their new cage, the two sitting together on a high perch and number three humbly taking a seat below.

They arrived in the afternoon, and were only half awake, while my Owl was fast asleep behind a yew stem. When it grew dusk I went to them again. My owl seemed unconscious of their presence, stayed where it was and blinked. All four might have been Eastern Potentates from their complete imperturbability. For days they never looked at my Owl, nor it at them, nor did either seem aware of the presence of the other. This went on for some time, the new comers gently calling at night and my Owl hooting as usual. So I transferred the large pair into an aviary in another part of the garden, and removed the wire partition, letting number three and my Owl meet.

They took no notice of each other, one sitting on a tree, the other on a perch, nor did they manifest either pleasure or anger. After a few days they were sitting on the same perch and now they roost close together. The other day as I walked up to their aviary in the dusk, another Owl softly fluttered off the top of it, and sailed up into a sycamore tree. Was this the lost mate? And if so?—I dare not think of its wounded and outraged feelings, though in one way, it has only itself to blame.

The large Owls have different tastes, for one sits out on a bough in the sun, while the other remains in a dark corner behind an old walnut trunk. Very seldom both are out in the day. Their cage abuts on the stable wall, and mice and rats abound, the latter in old runs. But now any young rats seen in the cage speedily disappear, and the supplies of mice diminish.

Now we have an 'embarras de richesses' as regards Owls, for not only do the two pairs shout to each other, but the number of visitors they have is wonderful, and the chorus at night of soft melodious tu-whit, tu-whoos varied by sharp screeches and mewings and whistlings; if the music were not all in the minor key, it would inevitably keep one awake. Sometimes my Owls call in the afternoon, and occasionally in the morning. On a very dark day, when the North wind blew over to us some London atmosphere, the Owls hooted at noon.

I feel we have not reached the final chapter with my Owl and its new friend, for if the former mate ever comes back, hoping to build a nest with it in the hollow tree, I shall do all I can to entice it in, and number three will have to be disposed of otherwise. What my deserted Owl's views will be in the matter remains to be seen.

Since this was written, the nesting season has passed without any sign of the wanderer's return.

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## NESTING OF THE CRESTED LARK.

*Galerita cristata.*

By W. E. TESCHEMAKER, B.A.

(N.B.—I have spelt the generic name as above because it is the more familiar form; Prof. Newton, however, tells us that "it is inadmissible owing to its prior use in Entomology" (it has been applied to a genus of beetles). If, however, the "*Avis galeritus*" of Pliny is the "*Elauda cristata*" of Linnæus, the name has a good standing and a further consideration is that it has a definite meaning, whereas "*Galerida*" is a meaningless word coined by Brehm).

The Crested Lark has a most extensive range in the Old World—from Spain to Northern China, from South Sweden and Central Asia to Senegal and Southern India. Its preference is for bare and barren countries—even for deserts—and it is found in greatest numbers in the warmest parts of its range. Environment has naturally caused the usual variations in point of size and plumage and the enthusiastic museum-naturalist has taken advantage of this fact to present us with more than thirty sub-

species. For all that, the Crested Lark stands out a well-marked type—in fact the type of its genus.

Its habits also naturally vary with locality. For instance, Irby could never find any evidence that this species migrated, even at so favourable a station for observing migrants as Gibraltar, but Oates tells us that “the great majority of those vast multitudes of Crested Larks that during the cold season meet us on every bare plain and every stubble-field, throughout the drier and better cultivated portions of Continental India at any rate, are, I am convinced, migratory. A certain number, however, unquestionably remain to breed.” The only time that I have personally come across this species in a state of freedom was on a high road near the little village of Mougins in the south of France and roads appear to be a favourite resort for this bird and have earned for it its Spanish name of *Carretera*. It even nests on roads. Irby says—“One nest which I found was placed between the tracks of a much frequented road near Tangier, in such a position that every passing animal must have touched the small clump of grass under which the nest was built. Now, was this site chosen because snakes, lizards and other vermin were less likely to come on the beaten track?” We find an interesting parallel to this in Oates. A correspondent from the Saharunpoor district in India states that he found “one nest in the middle of a village-cart track near a low bush between the wheel-tracks.” The cause of this habit may well be that suggested by Irby for, in a note supplied by a correspondent in Scinde, we find the following:—“It is a wonder to me how many of the eggs of this species are ever hatched, as out of many dozens of nests, which I left this year with single eggs in them to take later on, I found invariably on returning a day or two after that the nests were empty. What it is that takes the eggs I do not know (possibly foxes, as I saw their ‘pugs’) but, whatever animal it is, it must be an uncommonly clever nest-seeker as hardly an egg seems to escape notice.” However the *Carretera* does not restrict itself to roads and cultivated districts: it may be seen, according to Irby, “on the seashore running about like a Sanderling within a yard of the water” and also on the verge of the trackless Sahara.

From an avicultural point of view the Crested Lark has

much to recommend it. It is extremely hardy and takes kindly either to a cage or an aviary. Unlike our Skylark, the males of which species are absolutely intolerable in the breeding season, the *Carretera* is at all times extremely peaceable and inoffensive. I have watched it closely when rearing its young this summer and have been much impressed by the fact that, despite its bulk and powerful beak, it would allow any other bird—even a pair of Woodlarks—to approach its nest. Moreover it is a bird which shows itself freely in an aviary, spending much of its time on the wing and perching boldly even on slender twigs. Though never becoming very familiar it does not possess that most annoying habit—so common among the Larks—of going up, when flushed, like a sky-rocket into the zenith and for this reason its long, silky crest, of which it is evidently very proud, is generally intact.

But the greatest attraction of this species I have kept to the last—its gift of song—and I lay special emphasis on this because I think I might almost claim to have discovered the *Carretera* as a song-bird. Its biographers have told us much about its habits and appearance but of its song they have either said nothing or have even spoken slightly. In a sense they have been right in their estimate for its ordinary song is not remarkable and is often marred by discords, but they seem to have entirely overlooked the fact that this bird possesses an unrivalled latent gift of mimicry. Some half-dozen years since I spent a considerable time trying to discover the identity of an unknown songster in one of my aviaries. The song would commence with a plaintive warbling, soft and sweet as the breath of spring; then the pitch would rise and one would distinctly detect the silvery notes of the Blackcap; then it would fall and would merge into the mellow lay of a Garden Warbler, changing in a single instant to the bubbling strain of the Starling. Over and over again I stalked the singer but always with the same result—the instant cessation of the song. At last one day through a screen of leaves I saw a swelling throat and a sandy tail all a-quiver: it was a *Carretera* perched in an apple-tree. Not all Crested Larks sing as well as that one but all will show some talent, if caged separately, and I have one now, for which a

Berlin dealer charged me two marks, fifty, which can repeat any passage of bird-music which you like to put before him. Should any real interest ever be kindled in this country for singing-birds (an event, however, about as probable as the advent of the Millennium) I prophesy that the Crested Lark will come into its own and that its trade price will no longer be half-a-crown!

In India, however, the Crested Lark is esteemed as a song-bird, as I hear from Mr. C. Harrison of Tiverton, a skilled aviculturist who spent many years in that country. He writes:—"It is kept either in a bamboo cage or in a wood or wire one: the cages have no sand-trays but a piece of sacking and the dirt is scraped out with a scraper through the bars. The Larks are given brick-dust to dust themselves in, the food and water being inside the cages in the corners, where the pans are kept in position either by tying or by a piece of bamboo acting as a spring. They are fed on parched "gram" flour mixed with clarified butter, also on millet, with some grasshoppers for live-food." It seems to me an interesting and suggestive fact that in two of the oldest civilizations of the world—the Indian and Chinese Empires—song-birds should be so highly esteemed, whereas the younger nations of Western Europe, with the possible exceptions of the Germans and perhaps of the Italians of the 16th and 17th centuries, either set no value on them or only value them as table delicacies.

At one time or another I have possessed quite half-a-dozen Crested Larks but I never tried to procure a hen until this season when the before-mentioned German dealer sent me a pair and a "Rechnung" which included an item of five marks for the same. The sex of these two birds was rather a puzzle, for the smallest one with the boldest markings was apparently the male, whereas in the case of most species of Larks, of which the sexes are similarly marked, the female is usually the smaller and the better marked. They at once made themselves quite at home in the large aviary and were inseparable. This accords with the bird-books, which state that the *Carmine* is never found in flocks but always in pairs or small family parties.

About the middle of May the smaller bird which by this time I had fully identified as the male, (an exceptional circumstance,



of course), began to carry large beakfuls of grass and did his best to induce the female to build in a secluded corner. They used to flirt most outrageously and I may here remark that the *Carretera* seems to be a sort of buffoon of bird society; he never does anything without a vast amount of prancing, posturing and grimacing and apparently does his very best on all occasions to add to the gaiety of the community in which he finds himself by making himself ridiculous. But, though he likes to pose as a wag, he is anything but a fool. The female, however, had other views and I was very much annoyed to see that she had decided to build in the most open part of the aviary, close to the spot where I am in the habit of placing my observation chair.

According to Oates the Crested Lark generally makes use of some small depression in the ground, as for instance the print of a cow's hoof for its nest but my birds certainly dug out with their stout beaks a circular cavity and, what is more, they dug several before they were quite satisfied with the result, and then lined the cavity with fine grass. The nest was not placed in a tuft but in a spot where the grass was rather thin and it was therefore not particularly well concealed. It was completed on the 8th June; the first egg was laid on the 10th. The clutch of four eggs was completed on the 13th, but incubation commenced on the 12th. The eggs were rather large, the ground-colour cream, thickly spotted with light terra-cotta, dark-brown and a few purplish blotches. The eggs were so unlike one another that one would think that each one had been taken from a different clutch. One had confluent markings forming a circular blotch on the apex, another had the spots equally distributed over its whole surface and the remaining two showed rings of spots at the point where the diameter was greatest.

As far as I could ascertain only the female incubated and she was the most unsteady sitter that I have ever known, in fact it seemed to me impossible that the eggs should hatch in view of the length of time that they were left every day uncovered in a thinly lined nest on the cold ground and in particularly wet and chilly weather. I see by reference to my note-book that the only day without rain during the period of incubation was the 22nd. However, on the 24th, two young hatched and the remaining

youngster on the following day. The male used to keep watch and ward from certain coigns of vantage and pass the word to the female when anyone approached the aviary and the latter would at once spring from her nest: I noticed that she never adopted the precaution of running some distance through the grass before taking wing, as her friend and neighbour the hen Yellow Wagtail invariably used to do. Probably on the bare, open stretches of country affected by this species the ruse would be of no avail.

The young, as in very many other instances which have come under my notice, did not show any protective colouration: they had dense matted tufts of white down on the crown and back, and these, with the wide cream-coloured flanges of the beak, made them conspicuous objects among the green grass. One would almost think that they realized this fact and tried to neutralize the effect, for they managed to flatten themselves down in their shallow nest-cavity in such a way that they could not have looked flatter if a garden-roller had been passed over the nest. They grew fast, despite the fact that they had very little brooding and had to face exceedingly bad weather. For instance, the 1st of July, at 9.30 a.m., was as wintry a morning as I ever remember in an English summer. The rain was coming down in torrents, the wind blew hard from the north and it was very cold. Nevertheless the usual supplies had to be carried round, and, despite all possible despatch, the operation took quite ten minutes. At my approach, the female as usual left the nest, and my sympathies went out to the unfortunate young Larks thus left unprotected. In order to shorten the ordeal for them I had not intended to pay them my usual morning visit, but my curiosity was aroused. I said to myself that I should never have a better opportunity of ascertaining how the young of ground-nesting birds manage to survive a continuous down-pour of rain in open nests. So I changed my mind, and I am very glad I did, for I was rewarded by one of those rare peeps into the mysteries of bird-life which are the special privilege of the aviculturist. I had pictured to myself the young *Curruca* lying helplessly in a waterlogged nest, but I had quite overlooked the fact that in their hour of great distress they had a counsellor

and friend. Wise Old Mother Nature was whispering in their ear. Yes, with the experience of a thousand thousand years she was telling them what to do and how to do it. The three little Larks were sitting up in their nest in an almost erect position, facing one another with their breasts pressed closely together. Their wide beaks were pointing upwards almost vertically and also pressed closely together, thus forming the apex of a cone. Their necks were retracted, thus bringing the thick tufts of down and feathers on the crown and back together, and their wings—by this time showing quill feathers—were held closely to their sides. If my description has been sufficiently clear, you will at once grasp the meaning and object of those tufts, you will realize that each little back formed a cleverly-designed watershed, and you will understand why rain does not kill young Larks. When the North American Indian sticks three poles in the ground, lashes their tops together and throws a skin over this framework he makes a "tepee," and we regard the "tepee" as the product of his inventive faculty. But evidently the "tepee" is an old idea—as old as the hills. Long before the Indian set foot on the New World "tepees" were being erected on the wide Campo of Southern Spain, on the vast Steppe of Central Asia—by the *Carretera*!

Although the *Carreteras* did not think it necessary to brood their young closely, they used to feed them most diligently, and were extremely careful never to approach the nest when anyone was near the aviary. Once or twice I waited as long as half-an-hour to see the young fed, but always in vain. Under such circumstances most birds who are feeding young will fuss about for some time and then even risk taking a beakful of live-bait to the nest under your observation, or else will throw the aforesaid live-bait away in a petulant manner. But not so the Crested Larks. I was much amused by the extremely sensible, patient and methodical way in which they faced the situation. They simply retired to a little distance, taking a nice plump maggot with them, squatted down on a convenient ledge and waited. The expiration of half-an-hour would find them in the self same position still treasuring the same fat maggot. No doubt in the very open country, which they select for their nesting quarters,

they have to be particularly careful not to give away the position of the nest to either two-legged or four-legged nest-hunters, and their opportunities of visiting the nest unobserved are probably few and far between.

On the 6th July the young Larks left the nest, which shows us how Nature can expedite her processes when she thinks it expedient, for some young Rock Pipits, hatched the same day, did not fly until the 10th. Their prevailing colour was greyish, the tips of the primary and secondary coverts, of the secondaries and anterior margins and tips of the primaries pale buff. The underparts were whitish with a faint tinge of buff; the outer tail-feathers sandy. They still showed some down on the crown but this was soon displaced by a crest of fair length. A warmer colouring soon made its appearance, the superciliary streak being warm buff, and some mottled feathers appeared on the breast, their backs also becoming mottled which gave them a somewhat mottled appearance. In a wonderfully short space of time they became independent and learned how to dig for a breakfast.

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## AVIARY AND NESTING NOTES.

By Mrs. McCONNELL.

I am writing a few notes on my very hap-hazard aviaries and my nesting successes and failures, hoping they may be of some interest to bird-lovers like myself who cannot afford any very expensive structures, and also that the smallest contributions may be thankfully received by our kind Editor at this slack time of year.

An enclosure was originally made in a sheltered part of the garden and close to the house, 70ft. by 30ft. in area, wooden frame and sparrow-proof wire-netting for growing small fruits, but as wild birds were shut out all the year round it was a failure for this purpose, everything being eaten up by blight. I soon appropriated one end of it for birds and built a simple wooden shed with concrete floor as shelter. This was followed by others, and now the whole is given up to birds, and there are seven divisions and seven sheds of varying sizes, all erected by my own men, and some with only the ground for floor. I surrounded the

whole base with small mesh wire, burying it six inches in the ground as protection from mice, rats, etc. : covered some divisions entirely with half-inch wire for small birds and planted them with evergreen shrubs and ivy on the supports. Greenery is no use for Parrakeets as they soon destroy it, but I have a pair of Many-Coloured who do not do so. Strong springs on all doors, so that they cannot be left open, is a good safeguard. There is no attempt at heating, and many Parrakeets and small birds generally considered delicate have survived many winters in this place.

This year, my pair of Many-Coloured—who last year reared four in one nest to maturity, began to think of nesting early in February. The hen disappeared into her log nest the first week in March, and in due time the voices of young were heard, and so strong were they in two or three weeks time, that I allowed curiosity to get the better of prudence, and took down the nest to see when I thought the old birds were not looking that way. There were four strong young ones and, horrible to relate, they were never fed again. Last year I had done the same thing without any tragic result, but I suppose the nestlings were older. I *have* found a dead one in a nest poisoning the others, and this is my excuse to myself, but it is certainly wiser not to look.

I am now anxiously awaiting the appearance of a nest-full of young hybrids between a *Platycercus flaveolus* hen and a Yellow-naped or Port Lincoln cock. This morning (15th July) my man tells me he is sure they have been hatched more than two months, so I have taken down the log nest and looked in; there are three strong, young birds, well-fledged and looking very bright in colour with bright red frontal bands. Yesterday, I saw one appear, head and shoulders at the nest hole, several times, and I expect they will be fully out this or next day.

I have not many other successes to record. A pair of Virginian Cardinals hatched out two, early in March, in a nest made of coarse bents and lined with finer grass, in a small fir tree. The nestlings came out of the nest in less than a week, and squatted about near it, incessantly crying for food, which both parents were most assiduous in supplying. They had an unlimited supply of mealworms, beetles, and fresh ants' eggs,

and all kinds of grubs dug up by the gardener, who always has some receptacle to put them in when working. The old birds become wonderfully tame and confiding when feeding young, though rather wild and shy at other times. The hen again laid two eggs in the old nest, but they were no good, and now she has just died, I think from eating too many mealworms. One of the first nestlings was killed by some bird pecking its mouth badly, it was always opening its mouth and crying for food to any bird that came near, and no doubt annoyed somebody. The survivor is a hen and quite full-grown, only lacking the red beak.

Two Californian Quails have laid an immense number of eggs, and both began to sit early last month, but one died quite unaccountably after sitting a few days, and the other, who sat in a nest prepared for a domestic hen, was disturbed by another hen laying an egg in the midst of her's. These Quail are in a large enclosure in another part of the garden, where I keep rare bantams. I used to have great success with these delightful birds and have several times had twenty and more hatched out and reared in one nest, but have failed with them entirely the last two years.

A Black-breasted cock Quail and a Chinese hen made a nest in a heap of grass in a corner of a shed and laid five eggs; three disappeared, one was addled and one hatched out. They are the prettiest little family, always together and most devoted to the tiny baby, who gets through an unbelievable amount of mealworms, ants' eggs, etc., and the hen clucks and broods exactly like a domestic fowl. The little one is now nearly full-grown and the hen preparing a second nest; they are quite tame and charming little birds.

Any number of Canaries and Canary  $\times$  Goldfinch hybrids, a pair of Bronze-winged Doves, and many white and cream coloured Doves make up the tale of nesting successes this year, and I cannot complain, as I have not been able to keep up the *pairs* of birds and have a good many odd ones, also some of my Parrakeets have been disturbed. Better luck next year I hope.

I should like at some future time to give some statistics of the wonderful longevity of some birds in my possession.

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## AMONG THE BIRDS IN SUTHERLAND.

By K. SHERBROOKE.

I have been asked to write something for the Magazine, and having no aviary experiences to relate, I thought a short account of the birds I have seen here might be interesting.

My knowledge of birds is rather superficial, and I can only write as a lover of them and not from a scientific point of view. This house is only about a hundred yards from the sea, not the open sea, but a little bay with a rocky island about the middle, which can be reached on foot at low tide. This is the home of a pair or two of Oyster Catchers, but I have not been able to find their nests, which I think are there, somewhere concealed amongst the rocks and tufts of thrift which grows profusely all about the cliffs. Kittiwakes and Terns also spend much time on these rocks, and a green Cormorant or two are generally swimming about the bay, taking headlong dives at short intervals. The last few days two or three Divers have appeared, I think the Red-throated, but I have not got near enough to be certain, and they fill the bay with their weird noises, beginning with a mew as of a giant cat and finishing off like an unearthly dog fight! On the beach a pair of Ring Plovers dart along the sand and whistle monotonously. I found a nest on an island a few miles off with four tiny young ones lying immovable like little mottled grey stones; one of the party did a photograph of them, but unluckily it was not a success.

Nearly all the birds about here are very tame, possibly being in such a majority they feel safe, the human population being exceedingly small; in fact, one feels that the country belongs to the birds and one is only here on sufferance. Wherever you go you are being watched, far from silently, as the Gulls bark overhead, the Oyster-catchers scream about the rocks, Wheatears chatter at you from the stones, and Twites and Pipits flutter round in great agitation if you approach their nests. A pair of Buzzards have nested and brought off their young a few miles away, and we were lucky enough to see a Golden Eagle soaring towards the mountain of Quinaig a few days ago. Of course the great feature of this coast is the island of Handa, and parties are continually going off in boats to see the birds.

It is like a gigantic bee-hive, even from here, four miles off; with glasses you can see the stream of birds flying from the cliffs to sea and back again. The whole effect is wonderful from the sea, but there is generally such a swell that it is difficult to make out individual birds; these can be seen better from the cliffs, and by lying flat and looking over the edge one can see into the nests. We had a good view of the Fulmar Petrels in that way and saw one white egg. I believe they have only nested on Handa since 1893, and are supposed to have come from St. Kilda. The air is full of Guillemots and Razor-bills bobbing in the water like corks and flying with extraordinary rapidity, apparently to nowhere in particular, they set out as if to go for miles with immense determination, and then suddenly collapse into the sea with a splash. I think I made out three different species of Guillemots, and a fisherman tells me he saw a pure white one a few days ago. The Puffins seemed to be rather less numerous than when I was here some years ago, but the time of year may make the difference. The incessant noise is very striking, but not at all unpleasant, rather like distant bagpipes or violins in a high key. I have found several Eider Ducks nests, but now, the end of June, I think they have mostly hatched off. One or two pair of duck in the bay I am told are Pintail, and some wild geese were seen flying, which I hear breed on the islands in the next bay, and I intend to visit them and see if it is so, one cannot quite depend upon local information. Since then I have seen a nest and five goslings with their parents.

The Terns have been here about a fortnight, and are now laying on the islands, and the stately Gannet sails about the open sea. The Lesser Black-backed Gull is quite plentiful, I have not seen many of the Greater. The Cormorant is ubiquitous, there must be hundreds just round here; they nest on Handa and the Badcall islands, a comfortable-looking nest with a fringe of green round it. Some Sandpipers have been flying about the garden, and I have seen one Dipper on the rocks, but not the Ring Ouzel, which I rather expected to find here.

If anyone wishes to spend some time in the bird-world, I can recommend the coast of Sutherland in June.



## BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

The most important arrival for some time past is that of a young Shoebill (*Baleniceps rex*) which reached the Gardens on June 29th. It was presented to the Zoological Society by Sir Reginald Wingate, and brought home by Captain A. L. Butler, the Game Warden of the Sudan. In 1860 the Society received two specimens of this very remarkable Heron. These lived but a short time, and there have been none in Europe since, although there are three at Giza and one at Khartoum.

I would refer our members to an excellent paper on this bird by Captain Stanley Flower, which appeared in this journal in 1898 (Vol. VI. Second series, p. 191).

There have been few new arrivals during the past month, but nesting has been going on. The two young Scarlet Tanagers that I mentioned last month, unfortunately both died after leaving the nest. At that stage they were barely fledged, and quite unable to stand the cold and damp that, as luck would have it, set in just at the critical moment of their lives.

The Magpie Tanagers made an open nest of grasses in a privet bush about seven feet from the ground. Two eggs were laid, and as I write they have two young ones about three days old.

The White-throated Ground Thrushes which I mentioned last month as having successfully reared a pair of young birds, are now sitting again and just about due to hatch their second brood.

Crimson Finches are sitting; and a pair of Plale's Parrot Finches are rearing a brood of three or four young birds.

The pair of Cariamias which bred successfully last year have another young bird, now just a month old.

In the Great Aviary a Black-headed Gull has paired with an Australian Silver or Jameson's Gull. They hatched three young birds, but these were taken by other birds, probably Ibises or Night Herons. They laid again and we took the eggs and hatched out two chicks, which are progressing well in charge of a bantam hen.

But of considerably greater interest is the hatching of a

young Hemprich's Gull (*Larus hemprichi*). In 1896 Mr. Meade-Waldo presented the Zoological Society with three of these Gulls, a pair and their young one, which he had captured on board ship in the Gulf of Aden. They are the only examples the Society has possessed, and until this year they have shown no inclination to nest.

Chiefly confined to the Gulf of Aden, little is known of the nesting habits of Hemprich's Gull, and so far as I know the young in down has not been described. One expected a mottled bird like the young of most of the Gulls, but greatly to one's surprise this chick is of a nearly uniform buffish white, slightly darker on the back. The parent birds are laying again so we hope to rear others.

In one of the outside aviaries of the Parrot House a pair of Yellow-collared Parrakeets have reared a couple of young ones, strong healthy birds, exactly like their parents, except that their plumage is not quite so bright.

We recently had three Eider Duck's eggs presented to us, which were set under a hen, with the result that one hatched and a nice young Eider is being reared with a brood of young Tufted Ducks.

In one of the aviaries outside the Small Bird House a pair of Mexican Rose Finches built a nest in a cage hung against the wall, and have succeeded in hatching and rearing three young birds.

At this time of year the pair of Australian Bee-eaters which occupy one of these outside aviaries, form one of the most attractive exhibits at the Gardens. They have now lived with us for fifteen months and have done remarkably well. So tame are they that they will fly on to one's hands for mealworms and appear absolutely fearless. Their activity on the wing is wonderful, and I do not believe that any bee, wasp or fly that enters the aviary ever escapes them. They are constantly making flights from the perch after insects that are to human eyes invisible, but they always return with an insect of some sort in their beaks. Bee-eaters are seldom kept in captivity, but in an aviary no birds are more delightful.

D. S.-S.

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Photo D. Seth-Smith.

AUSTRALIAN BEE-EATERS (*Merops ornatus*) AT THE ZOOLOGICAL GARDENS.

West, Newman proc.



## REVIEW.

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### REVUE FRANÇAISE D'ORNITHOLOGIE.\*

Our neighbours' <sup>5</sup> ornithological journal for the months under review contains numerous articles of interest in all branches of Ornithology. In this country, where the ornithological magazines are more numerous, they have also become more specialized and in consequence of less interest to the general reader.

In France, however, this Magazine deals with all kinds of Ornithological matters, systematic work, migration, foreign birds, native birds, aviculture, etc., etc., and thus every bird-lover, whatever their particular tastes, will find something of interest. Space will not permit us to deal with the articles individually. We have a long and carefully drawn up list of the fossil birds of France, several articles on the recent immigration of Crossbills and their status in different parts of the country, notes on Tunisian birds by Dr. Nullet Horsin, notes on Hawking with a Goshawk by Prince Ernest d'Arenburg, as well as many shorter notes on the occurrence of rare birds, varieties, etc. in different parts of France.

Of more especial interest to aviculturists are the articles by M. A. Vaucher on the Great Bustard, dealing more especially with plumages, by M. René Bacon on the Wintering of Birds in outdoor aviaries, and a very practical article by M. P. Vincent on a visit to a collection of living softbills. Finally, we are glad to notice that the French Government has appointed a Commission 'to establish on scientific lines for the whole of France a complete classification of useful and harmful birds with the extent of their usefulness or harmfulness and special mention of those that might be harmful at one time of year and useful at another.' The Commission will have much to do to carry out their object, but it is on the right lines. Bird Protection, except in the case of species in danger of extermination, should be run on economic lines and not on sentiment, and a careful enquiry is the only way to determine which species should be protected.

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\* *Revue Française d'Ornithologie*. Monthly—May, June, July.  
Paris: 25, Quai Voltaire. 10 francs yearly. 85 cents per month.

## THE SOCIETY'S MEDAL.

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Mr. W. E. Teschemaker is apparently entitled to a medal for breeding the CRESTED LARK, an account of which appears in this number.

Will any member, who knows of a previous instance of this species having been bred, kindly communicate with the Hon. Sec.?

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## CORRESPONDENCE, NOTES, ETC.

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### THE WHOOPING CRANE.

SIR,—Since writing the note on "Wintering Cranes in New England" (p. 223) I have some further evidence of the existence of the American Whooping Crane which a short time ago I thought was either extinct or on the verge of extinction.

Mr. Charles W. Ward writes me that he saw "altogether about a dozen Cranes" along the Gulf Coast of Louisiana during February, 1912, and Mr. McIlhenny, of Avery Island La., confirms this in a letter to me, in which he states there are still a few between Vermillion Bay and the Texas line.

Mr. G. D. Tilley, of Darein, Cinn., received one live Whooping Crane last winter, but I could not find out any details as to the date or place of capture, nor do I remember where this bird was finally sold.

The above information may be of interest to English aviculturists, vague as it necessarily is.

JOHN C. PHILLIPS.

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### YOUNG QUEEN ALEXANDRA PARRAKEETS, ETC.

SIR,—I have two more of these hatched from another pair of birds. There were three, but one died in the nest; why I do not know, for it was well-grown.

I also have a brood of three young Shamahs, which have left the nest.

An Orange-headed Ground Thrush has her nest, with three eggs, built in a small fir tree. The nest resembles a Blackbird's, but is more tidy outside; the eggs are large for the size of the parent bird, and are a warm buff, spotted like a Blackbird's egg with rufous, chiefly at the rounded ends; but I have only just peeped at them.

There is also one young Blue Robin ready to leave the nest.

HUBERT D. ASTLEY.

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## PRACTICAL BIRD-KEEPING.

## XVIII.—THE SMALLER WATERFOWL.

By D. SETH-SMITH.

A fascinating branch of aviculture which has been somewhat neglected of late years, but is now becoming rather popular where suitable conditions prevail, is the keeping and breeding of the various species of wild ducks, of which a large and varied assortment are to be had and will well repay the trouble bestowed upon them. Ducks have many excellent qualities, they are mostly very pretty, some are extremely beautiful; they are, on the whole, hardy, intelligent and peaceable, and providing they have space and suitable nesting sites, the majority will readily breed in confinement.

As to the species of ducks that are to be obtained without much difficulty, the European kinds may be first mentioned. Of the surface-feeders, Pintail can generally be obtained at a very reasonable figure, and the drake is one of the most elegant of all, but they are not by any means free breeders. Wigeon and Shovellers are also very showy and will generally breed, while Teal and Garganey are lovely little birds but shy breeders, unless they have plenty of space.

Amongst the diving ducks, the Tufted Duck is the most popular, and should never be omitted from a collection. The male is most handsome with his plumed head and pure white sides. Pochards and Scaup are almost equally attractive, and all spend most of their time in the middle of the pond constantly diving for their food which consists to a large extent of aquatic insects, crustaceans and vegetation which exists at the bottom of the pond.

Amongst foreign species, the Mandarin and Carolina ducks will always be the most popular, for besides being brilliantly and beautifully coloured they are hardy and always obtainable, and the Carolina at least is a very free breeder. Japanese or Baikal Teal, formerly some of the rarest, have recently become the commonest foreign ducks on the market. The drake, when in colour, is nearly as handsome as a Mandarin. When first im-

ported they are very wild indeed, and if turned down on a pond that is not well fenced in will probably disappear at once. But they soon become fairly tame. Other beautiful species are the Chiloe, Wigeon, Bahama Ducks, Chilian Pintail, Red-crested Pochard, and several very beautiful Teal.

The Tree Ducks form a group by themselves, of which the White-faced and Fulvous are perhaps the best known. They are quite hardy and will do well if treated in the same way as the other ducks, but they are somewhat quarrelsome. I have found, however, that a pair or two kept with other ducks on a fair-sized pond will do no harm.

Regarding the conditions that are necessary for the keeping of a collection of ornamental waterfowl. If a large natural pond, fed by a stream, and surrounded with rushes and grass, is available, no more suitable place could be found, especially if it should contain an island or two, and be sheltered from the cold winds by a belt of trees or rising ground. But such situations are not always to be found, and it may be necessary to construct an artificial pond such as those in the Zoological Gardens, where, in spite of many drawbacks, a large collection of ornamental waterfowl is maintained.

Space for the ducks to roam on grass is almost as necessary as the pond itself, for many kinds of ducks are fond of grazing like Geese, and roaming in search of worms after a shower of rain. At nesting time also they like to choose their nesting places, often at considerable distance from the water. So when planning a place for waterfowl, the larger the area of ground surrounding the pond the better will the collection thrive.

If the site is much exposed to cold winds some sort of shelter should be provided in the form of rustic sheds, or shelters made of rushes tied into bundles and propped up like wheat shocks.

Rushes and other thick herbage should be encouraged for shelter and nesting sites, but some ducks prefer to nest within the shelter of a wooden box or kennel, and several of these should be provided, the ground forming the bottom, and a hole just large enough for a duck to enter forming the entrance. Quite a number of species prefer to nest in boxes or logs at



some height from the ground, and so boxes should be fixed on stumps from four to six feet high, a rough log leading from the ground to the entrance.

The enemies that have to be fought against are foxes, cats, stoats, weasels and rats, and it is well worth while to go to the expense of a six-foot fence of wire-netting round the whole enclosure. To make this proof against all furred vermin it must be of small mesh, say five-eighths of an inch. It should be sunk into the ground for eighteen inches, and then turned outwards for say twelve inches, and the trench filled in and rammed. At the top of the fence also the wire should be turned outwards for two feet, that is, an extra length of wire netting two feet wide should be wired on to the top of the upright fence and supported outwards at right angles by means of iron supports screwed to the upright posts. Such a fence should be practically vermin proof.

Ducks should be fed twice a day, on a mixture of wheat and barley, and the quantity given should be just so much as will be readily consumed. The birds should be taught to come to the keeper's whistle, and when they are once accustomed to this they will readily swim towards him when feeding time comes. If they do not do so it is a sign that they are being over-fed. In cold weather, a small quantity of barley meal and chopped boiled liver or bullock's heart is very desirable, and, in fact, for the diving ducks, unless they are able to obtain a good deal of natural food, this diet should be given in small quantities pretty constantly. Bread is also an excellent diet for most ducks, and stale crusts, thrown into the water will be much appreciated.

As to the procedure in the nesting season. Experience teaches us that broods left to the parent ducks are rarely reared successfully on a large pond in a mixed collection. Many young ducks are extraordinarily independent and will go a great distance from their parents, thus falling victims to any enemy. It is always best to take the eggs and entrust them to a reliable hen to hatch. A cross between a Silkie fowl and some breed of small bantam makes the most suitable type of hen for the purpose. The ducks' eggs should be taken any time after the laying of

the whole clutch, when incubation has commenced. This stage being determined by the presence of down in the nest.

When the young ducks are hatched they should be left with the foster hen in the nest for some twenty-four hours, when they should be transferred with her to a coop, which should be set out on dry ground in a sunny position. The young ducks should not be allowed access to water for the first day or two, especially in the case of the smaller Teal, which are apt to get their down saturated with water, when they readily catch cold and die. They need very careful watching for the first week or so of their lives.

Custard or finely-chopped yolk of egg, mixed with ants' eggs and biscuit meal or stale bread crumbs forms a good food for the young ducks. Duckweed is also a necessity and should always be supplied, at first in very shallow dishes, and afterwards on a small pond.

Young ducks should not have access to the large duck pond until they are almost full-grown, but should be reared on quite small ponds to which no other ducks have access, or they will take all the food provided for the ducklings. Ducklings should be pinioned when about a week old, when the operation is such a slight one that it will cause them no inconvenience. As they grow older, soaked Canary-seed and finally wheat and barley should be given. For diving ducklings, such as Pochards and Tufted Ducks, ground bullock's heart or liver should be added to the diet after the first fortnight of their lives.

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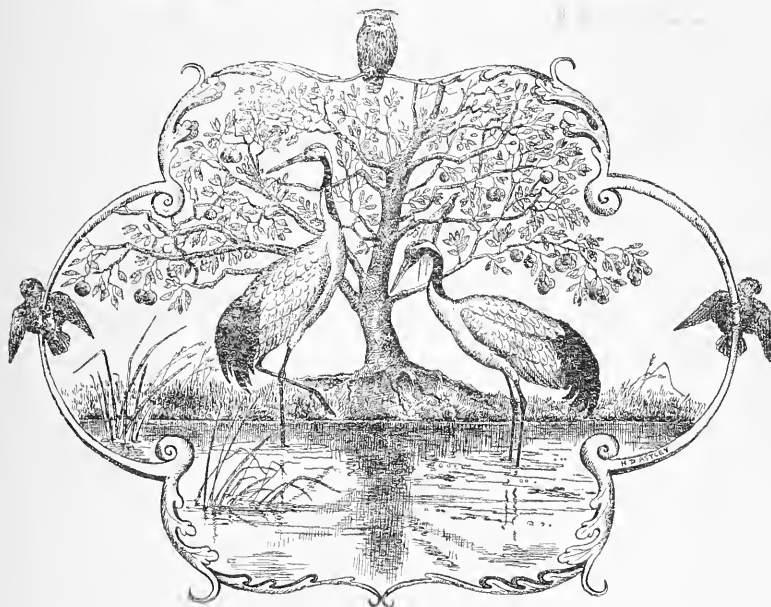
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Edited by J. LEWIS BONHOTE, M.A., F.L.S.



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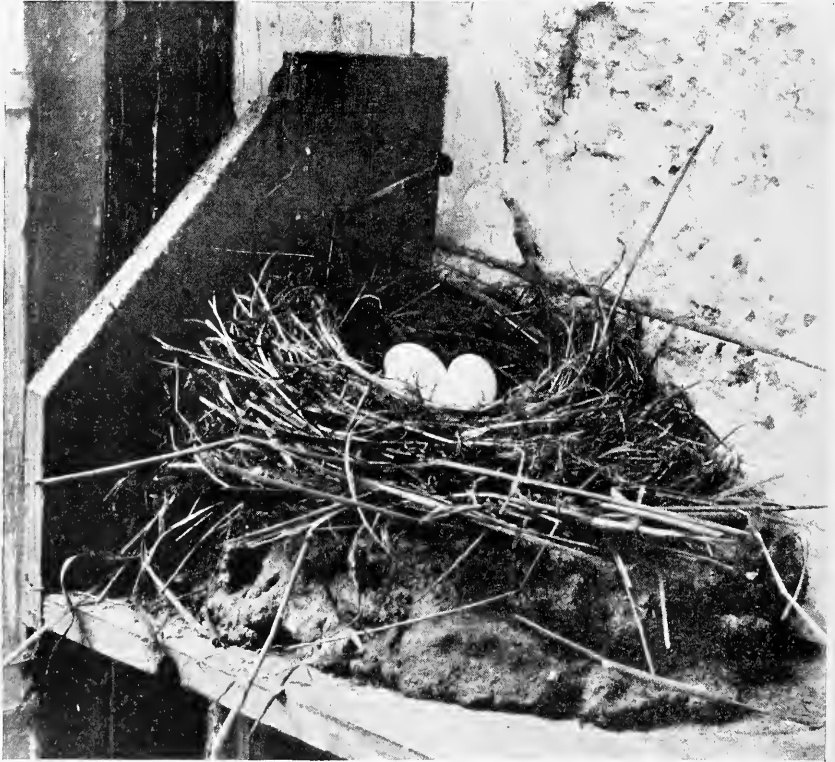


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NEST AND EGGS OF THE BLACK REDSTART.

# Avicultural Magazine,

BEING THE JOURNAL OF THE  
AVICULTURAL SOCIETY.

Third Series—VOL. III.—No. 11.—All rights reserved.

SEPTEMBER, 1912.

## NESTING OF THE BLACK REDSTART.

*Ruticilla titys.*

By W. E. TESCHEMAKER, B.A.

The old saying—"what's in a name?" certainly does not apply to Ornithology, for nomenclature has always been a bone of contention among ornithologists, and at the present moment it might be said to be the question of the hour. The origin of some of the more obscure names of birds is really quite an interesting study in itself, that is to say, considered apart from the vexed question of scientific nomenclature. So let us consider for a few moments the various names that have been applied to the present species. "Redstart" of course means "red-tail," "start" being obviously the Anglo-Saxon word "*steort*"; the German name "*rothschwanz*" is an exact equivalent, and also the Spanish "*colirojo*" and the Latin "*ruticilla*."

In the Linnæan "*motacilla*" we have an exact equivalent to the early English name "quick-start." We seem to have no equivalent, however, amongst English synonyms, to the German popular name "*hausrothschwanz*" (house-red-tail). We now come to the name "*titys*," which is a bit of a puzzle. Scopoli wrote "*tithys*," but he admittedly simply copied the word (erroneously) from Linnæus, who spelt it as above. It looks rather like a proper name extracted from Greek mythology, but no name at all like it is to be found, except *Tityos*, the gentleman whose liver was perpetually torn by vultures in the nether-world. What then could Linnæus have had in his mind when

he wrote "*titys*" ? No doubt a mere student of living birds would give the problem up as a bad job, but an ornithologist of any eminence is never quite happy unless he is having an argument and here was an opening. Several gentlemen with distinguished names thought he meant to write "*tites*," a Greek word meaning 'an avenger'; but Prof. Newton announced with conviction that it should read "*titis*," which originally meant 'a small chirping bird.' Mr. J. E. Harting, also an eminent ornithologist, was not at all satisfied with this explanation, and insisted that Linnæus was thinking of the Greek adjective "*tithos*," which means 'domesticated' and would have reference to the bird's habit of perching on houses and nesting in holes of walls. Then the new school of nomenclature appears upon the scene and decides that the bird that Linnæus described was not a Black Redstart at all but a hen Redstart of venerable age and somewhat dusky plumage, and that, therefore, the Linnæan specific name could not stand but must give place to the name which stood next in chronological order, and that the Black Redstart must be known for all time by the truly appalling title of "*Phoenicurus ochrurus gibraltariensis*." the first of which epithets means 'purple-tail' (a misdescription), the second 'yellow-tail,' (a contradiction), and the third can hardly be called descriptive, seeing that, according to Irby, this species is only seen at Gibraltar in winter. (I have no quarrel with the new nomenclature, but at the same time I cannot help thinking that it would have been far more satisfactory if a really representative international congress had settled the question for all time by selecting that name for each species which appeared to them to be most suitable. If priority alone is to decide the question we shall often find ourselves forced to accept a name which may be ungrammatical, inappropriate, or, as in the above instance, absolutely meaningless. However, we shall have to judge the system by its success; if it succeeds, we shall at all events have uniformity; if it fails to secure universal recognition, it will have made confusion worse confounded).

Hartert sketches the range of this species as follows:—  
"Europe from Baltic to Mediterranean, east to Roumania and  
"Bulgaria. Wintering partly in Europe but mostly in Africa.

"Casual in Scandinavia, once in Finland. Replaced by a number of rather different forms in Caucasus, Armenia, Persia, Syria, Transcaspia to Turkestan, Altai and Sayan Mountains, Central Asia generally and parts of the Himalayas to Tibet and Mongolia." It is a regular winter visitor to the south of England, and especially to the south-western counties. Here (Teignmouth) the Black Redstart may be occasionally seen on a sunny winter's day in some sheltered nook of the cliffs—indeed the first Devonshire (and fifth British) specimen was killed here in 1833. Although Witherby states that "reports of its breeding here are not substantiated" there appears to be fairly good evidence to that effect. For instance, Bellamy reports an instance from the neighbourhood of Exeter (Nat. Hist. S. Devon) and Morris states that he received a nest and eggs from the neighbourhood of Longdon.

But although we are told that the Black Redstart is extending its range, there is evidence that its visits to this country are becoming rarer and not more frequent. If anyone doubts this let him refer to Messrs. D'Urban and Mathew's "Birds of Devon," where he will see that in a single week of November, in the year 1843, no less than twenty were killed near Plymouth alone, and more than twenty in 1850. One gallant gentleman by his own unaided efforts slew no less than sixteen at Plymouth in Nov., 1852! We may be quite sure that, if the collector could have had his way, there would not be one single Blackstart upon the face of the earth to-day, but, happily, two circumstances have saved it from extermination—the inaccessibility of many of its breeding-places and the protection extended to it in some countries. The typical site for the nest of this species is perhaps a crevice in a rocky ravine, high up amongst the Alps, not so very far below their gleaming summits of eternal snow, and the fact that the oldest males are to be seen at the highest nesting stations, whilst the younger males in the grey plumage have to be content with lower elevations, may be said to show that this species seeks complete seclusion for its nesting operations. It is singular, therefore, to find the Black Redstart in a large area of Central and Southern Europe nesting in barns and sheds in close proximity to human dwellings, and showing itself boldly in the

very midst of villages and even towns, from which habit presumably it derives its German popular name, 'hausrothschwanz.' Of course, as we know, there are town mice and country mice and the habits of the town mouse are not those of the country mouse, but this does not altogether explain the matter to me, for, in an aviary at all events, the Black Redstart appears to be a very shy little bird, which never courts attention unless it is hungry or has some particular request to make. Perhaps the Black Redstart has an enemy, like our Missel-Thrush, who finds it safer to rear its young in close proximity to houses—albeit a very shy bird—in order to avoid the depredations of the Jackdaw.

As with most other species in my aviary, I was content to study the habits and requirements of the Black Redstart for several years before attempting to breed it. In the August number of the Magazine Dr. Butler has told us (unless I have misunderstood him) that "special knowledge" is not indispensable to the breeder; if only the latter has "luck," he will wake up some fine morning to find that he has attained his object without exertion. Without doubt a fluke comes in most usefully at times, but I fear that the beginner who starts bird-keeping on this principle will have to wait a long time for any results above the ordinary; and, moreover, even if he should secure the desired fluke, he will probably find the latter very little use to him unless he has special knowledge. Be this as it may, I do not consider the time I devoted to studying this species wasted. In the first place I ascertained that the Black Redstart is very deadly in a mixed community. His colouring is suggestive—black, the garb of night and of the deeds of darkness, and red, which connotes battle and bloodshed. If one could only persuade oneself that a 'systematic naturalist' was likely to know enough about the actual character of a species, which is but a rare straggler in his country, to correctly gauge its disposition, it would be tempting to think that Linnæus really meant to write "*tites*" (instead of "*titys*"), for the Black Redstart is indeed an "Avenger." I once received from one of our lady members a pair of hand-reared Blue-Tits, which would perch on one's shoulder as soon as one entered the aviary, begging for a mealworm. One day, whilst they were in

this position, they suddenly cowered in evident alarm without any apparent cause except perhaps a small dark shadow which passed overhead. A few days later those Blue-Tits lay still and stiff. Then I thought of that dark shadow: it was the shadow of Tites, the Avenger. But I could never catch Tites at his deadly work, for Tites is an assassin, subtle, stealthy and secret.

I also noted that the Black Redstart delights to lurk in the darkest corner—a ledge under and close to the roof by preference—and decided that that would be the best position for the nest-box. I made several experiments to determine the best form for the latter, one being after the model of a chalet and quite ornamental, but the only one that seemed to attract was the simple box with an opening at the top, which may be seen in the photo. I also made many experiments with different forms of insect food and came to the conclusion that it would not be difficult to rear the young.

Having decided that it would be worth while giving the species a trial, the next thing was to look round for a breeding hen, the one that I had not being of the required type. One was sent me the same autumn which looked very promising, and the following spring I caught up this bird and the old male (whom we will call Tites) and placed them temporarily in an empty cage in the bird-room whilst I cleared out a few birds from the smaller aviary to which I intended to transfer them. But the Fates were against me that day. The housemaid, who feeds my birds, discovered them and thought that I had forgotten to feed them: when I returned I found an open door and Tites in sole possession of that cage.

*(To be continued).*

---

## THE TRANSPORT OF BIRDS.

By FRANK FINN, B.A., F.Z.S.

As the cleverest aviculturist that ever lived cannot breed from birds that he has not got, the question of transport may fairly claim to be the most important in aviculture; it is chiefly the difficulties herein involved that account for the backward state of our science compared with the sister pursuit of horticulture. If one could transport birds in the egg as easily as plants in the seed, how things would have boomed by this time!

The chief difficulties in transporting birds arise from the necessity of very close confinement, and the inevitable alterations of temperature that have to be faced. The latter cannot be entirely obviated, but travelling-cages might be a great deal better made than one often sees them; in fact, I think bad packing is responsible for a great deal of failure in bird transport.

In a travelling-cage for long distances the room must be secured by depth and breadth; no more height should be allowed than is necessary to give the occupants head-room when standing erect on the floor or perch; and the perches should only be just so high above the floor as to ensure a bird not being jammed if it tries to creep beneath them.

Of course one is familiar with cages of this pattern from those used by continental dealers; but for a long journey the floor question becomes important. Wet dirt is the great trouble to contend with in taking birds a long distance in a small space; the terror of germs is, I think, made too much of, but plastered plumage and clogged feet are serious matters.

In bird importing, before everything else, one ought to "hope for the best and expect the worst." One *should* clean out the small travelling cages daily, and put in fresh sand or sawdust, but the chances are that one will not have the opportunity, owing to sea-sickness, awkward storage, or other causes; or, in the more probable case of the birds being sent in the charge of someone else, that someone may lack the will as well as the power to give daily attention in the matter of cleaning. If the birds get fed daily, that is a mercy to be grateful for. Moreover, sawdust and sand may be unattainable at the time



and place, for opportunities of taking good birds out or home do not always come just when one is prepared for them.

Therefore I recommend using the barred floor over a draw-tray or board, as with this the cleaning becomes a matter of less urgent importance. The principle is used in parrots' cages, ships' hen-coops and in our poultry-fattening coops here, as well as in the admirable Chinese transport cages, and it seems strange it has not spread further.

There is an idea about, I think, that barred floors will hurt a bird's feet, but this is entirely erroneous. Of course the bars should have sharp edges rounded off, and if this is done, even waterfowl, which are, naturally, tenderer-footed than land birds, will travel all right on such a floor. Indeed, it is far more natural for them, or for any birds, to tread on more or less yielding bars with uneven pressure on the foot, than on a hard level board, which is particularly apt to give corns.

For such birds as parrots, which will gnaw through wood, the floor-bars must be wire or wire-netting, but otherwise wood should be used, though I have seen Toucans and Tanagers imported in fine condition on a wire-netting floor.

It may also be objected that such a floor is never quite clean. That is true, but neither is a solid floor in a small ship-board cage, even if cleaned daily; and at any rate there is no danger of thick clogging dirt, which is what is really serious.

The width of the spaces between the bars or of the netting-mesh should be about an inch for birds of a pigeon's size or over, and half-an-inch for canary-sized birds, and so on.

The one drawback of this method is that if the food is spilled on the floor, the birds may go unfed for a long time, if the mesh of the grating be too small or the height above the draw-tray too great, to enable them to reach the spilled food.

But then this should not happen; one very essential point in bird-transport is so to fasten the feeding and drinking vessels that they cannot be upset by any possibility. Of course many birds will throw out their food themselves, but a deep feeding-vessel, with narrowed top, will obviate this to a great extent. All feeding-vessels should be made so as to be accessible from the front and should go inside.

The Chinese transport-cages seem to me to be the most perfect form that has been devised for a hot climate at all events. They are made of split bamboo, remarkably true, though without a single nail in them. Top, sides and bottom are all of this work, with a draw-tray below. There are three sliding doors, one in the middle and one at each end, so that birds can be run from one cage to another without handling, and at the bottom of the front are two tiny doors, one at each end, to allow of slipping in troughs for food and water. The perches, three in a high cage and two in a flat one, are fixed immovably by having one of the bars let through a hole in the end during the process of construction, and do not cross, but run from end to end.

The only fault in the cage, is in fact, that thus the end of the perches comes over the food and water. This of course should be avoided, but in practice I have found birds thrive extraordinarily well in these cages, which are commonly used in Calcutta as store cages by the dealers, who keep stock in them for months together, and that in a fiendishly hot climate.

The usual size is about two feet long. Some are square in section, others flat; the latter are of course best for shipping, and I have seen such different birds as Canaries and Japanese Teal thriving in cages of the same pattern, the perches being of course removed in the latter case.

Ground-birds do not need perches during transport, even if, like Pheasants and some ducks, they perch occasionally, unless the cage is a high one, which will seldom be found possible. Perching-birds, being always on the jump, need perches even when on a barred floor, but these should always be put so as not to cross, and it is well to have one thick and the other thin, where two are used, to afford a change of grip. Of course the drawback to a cane cage is that it affords no protection from weather and vermin. If, therefore, it cannot be hung out of the reach of rats and cats, it will have to be enclosed in a case with a hinged front of wire; and in this case it will be very likely thought as well to make a box cage while one is about it.

The front of such a cage is best made of strong wire gauze of a quarter-inch mesh; if netting is used, two layers should be put on, separated by corks, which will bid any vermin defiance.

Ants, however, may give trouble, and must be combated by applications of Kerosene.

Except in the cases of such birds as swans and geese, which are not nervous and not likely to hurt anyone, it is most inadvisable to have cages with wide bars permitting birds to get their heads out. I have actually seen this advised for herons, storks and cranes—all birds with most dangerous beaks and the will to use them! Where birds can be allowed the use of such open fronts, the food and water are of course best put outside.

With regard to packing, the best rule to follow is the fewer birds the better. Sociable birds are of course best kept in pairs, or at least in two's, if of the very cuddlesome sort that chums up with anything; very spiteful ones must of course be kept singly, and may need solid instead of barred partitions. But however sociable birds are, every effort should be made to keep as few together as possible, so as to give the maximum amount of room to each individual and to avoid the danger of crushing or trampling if they are frightened, and the fouling of floor, perches, food, and water.

Importation in bulk, I am inclined to think, has something to do with the curious fact that a rare species, which necessarily comes over a few at a time, is so often easier to keep than a common one which arrives by the hundreds.

Of course soft-bills make much more mess than hard-bills, and so cannot be packed so many together—or at any rate should not be; the dirtiest of all birds are fish-eaters and honey-suckers. In the case of these last care must be taken to see that they do not mess themselves up with their liquid food, which should therefore be served to them in a vessel with a lid, perforated with holes to admit their beaks. Water-vessels should be arranged so that the birds cannot splash in them; unless the cage is very large, so that a bath can be put in in calm warm weather, the luxury of washing had better be dispensed with for the voyage. This applies particularly to waterfowl, for unless they can bathe regularly and properly they get miserably draggled; water does not “roll off a duck's back” if that duck has been short of bathing accommodation of late.

*(To be continued).*

## THE PARADISE FLYCATCHER.

*Terpsiphone paradisea affinis.*

By E. C. STUART BAKER, F.L.S., F.Z.S., M.B.O.U.

I fear that my experiences respecting the keeping of this most beautiful little Flycatcher in captivity will not be of much assistance to those who wish to do the same, for my *captive* was almost as free as its brethren of the woods and forests.

It was brought to me at Gungong in N. Cachar by some Nagas in the early Autumn, September to be exact, of 1886 and had evidently been kept by them for some months, for the string attached to the tarsus was worn quite smooth next the leg and the latter had a distinct mark all round where it had been rubbed and healed. It was kept in the way so many birds are kept in India, that is to say, fastened by the leg to a small perch over which was fastened a loop of bamboo by which it could be carried and at either end of which was placed a small bamboo cup for food and water.

It was quite tame when it arrived and greedily took flies, grasshoppers, etc. from the Naga who owned it, flying on to his wrist or holding on to the sheet by which his body was covered. The enormous sum of one shilling and fourpence transferred the ownership to myself and my first act was to promptly cut off the string and let the bird loose in a small outdoor aviary, about 6ft. by 4ft. by 6ft., when he at once flew to a perch, preened his feathers and commenced to call for more food.

I soon found that imprisonment was unnecessary for the little chap except at night. Within three days of his arrival he would eat out of my hands through the wire netting of his cage, following me from one side to another as I passed round it. Then I tried entering the cage and after his first fright at this novel manœuvre he promptly alighted on my head and then scrambled down on to my arm where he stayed and picked up some flies I had brought for him from the palm of my other hand. Two or three days after this I ventured to take him out of his cage into the open and he followed me round occasionally flitting into the air but sitting most of the time on my shoulder eating, as I caught grasshoppers for him. He made no attempt to fly away

although his native jungles were in sight all the time and indeed he did but little flying, contenting himself with letting me do the catching of the insects whilst he did the eating. When, however, I wanted him to go back into his cage as darkness approached I found he was very firm in his refusal to enter therein and it was not until I got him some chopped fowl's liver and put it inside that he consented to go in. Before long I gave up shutting him in his cage at all and then, finding I did not insist upon it, he generally went in on his own accord at roosting time and all I had to do was to see that the fastenings were closed.

After he had been with me for a couple of months I wanted the cage for some *Erythropus amurensis* and so Mr. Flycatcher had to give up his sleeping compartment and thence forward he slept in mine, generally selecting the rung of my towel horse or the edge of a picture as his perch. At the same time he entirely disapproved of his cage being given up to the Kestrels and would often fly up against the wires, cursing the inmates in the most awful bird language until he thought he had really frightened them badly, when he would come back to my shoulder and condescend to eat anything I caught for him.

His voice, when swearing at the Kestrels and sometimes when annoyed for other reasons, was very loud and harsh, often almost a scream, but he had quite a pretty little song in the spring and often used to whistle away to me in the mornings and evenings.

He was distinctly a lazy bird and always preferred sitting on my head, shoulders or arms and eating what I caught for him to flying about and catching insects for himself, and it was months before I could get him to earn his own livelihood, and always he was ready with an excuse for letting someone do the hard work for him.

Butterflies he disdained but he enjoyed grasshoppers, caterpillars, woodlice, grubs and beetles and, above all, house flies and for these latter he would always exert himself. Perhaps, however, even more than house flies or anything else living he enjoyed little tit-bits of fowl's liver raw, and it was very pretty to see him swooping up off a chair-back, high up, almost to the

ceiling, as I threw up pieces of liver for him to catch. He was a magnificent catch, and would have been worth playing in the slips in any test match, but he was not nearly as quick as a tame Drongo I kept at the same time and when both were in the same room together I had always to throw the Drongo a piece first and whilst he was after it, throw a piece for the Flycatcher in the opposite direction.

It was a very beautiful sight to see the two birds in the air at once; the Drongo, a specimen of the Lesser Racquet-tailed species (*Branga remifer*) with glistening coal black plumage and the snowy white Flycatcher, both with their beautiful tail feathers streaming out behind them. The Drongo seemed to feel no inconvenience from his tail feathers when turning and twisting in the air, but the Flycatcher, who eventually developed four magnificent central tail feathers, always seemed to find these a handicap when he wanted to turn suddenly. Flying straight ahead, the beautiful white streamers floated out behind him like waving banners, curving gracefully with each dip of the bird's rising and falling flights: but when he wanted to dodge on one side they caught the wind and checked his speed quite visibly.

When I obtained my Paradise Flycatcher he was a little red brown bird evidently of that season, confirming the story of the Nagas to the effect that they had but taken him from the nest the preceding May. Even then he was a pretty bird. The whole forehead and crown were black gradually shading into grey on the chin, throat and upper breast and into the same colour on the nape, though there it was darker and more glossy. The rest of his plumage colour was a bright dark chestnut, the quills of the wing darker and browner on the concealed portions. Below the whole surface was a ruddy orange, the centre of the abdomen and vent being almost white. The next year the bird acquired two long centre tail feathers, but these were red as in the adult female, though he also assumed the black head of the adult male and his lower parts turned an almost pure white. In the third year he still retained the chestnut upper tail coverts and also a good many chestnut feathers in the wing-coverts and scapulars and it was not until he was in his fourth year, or a little over three years old, that he attained the full snow-white glory of the

adult bird, with four long white tail feathers, black shafted and black edged.

I think the Eastern sub-species, *affinis*, is a more beautiful bird than the Western form, *Terpsiphone paradisea paradisea*, which has no black markings or black shafts to the feathers. The border of mourning seems to add to the intense whiteness of the rest of the plumage and make it contrast even more vividly with the velvet black head and neck.

Probably the Burmese Paradise Flycatcher also has the tail feathers next the central rectrices more often, and more fully, developed than the Indian form in which it is rare to find more than the central pair lengthened.

Their habits, too, are rather different, for *T. p. paradisea* is principally found haunting and breeding in Mango Groves or other groves of big trees, with little or no undergrowth, whereas *T. p. affinis* is undoubtedly a bird principally of the bamboo jungle, though it may also be found in dense evergreen forest and equally often in the secondary growth which springs up directly land cleared in virgin forests and cultivated, is once more allowed to lapse into wildness.

Undoubtedly from a picturesque point of view, the deep green foliage of the huge Mango trees forms the best background to the whiteness of this bird's plumage, against which it flickers and shimmers in flight like some weighty tuft of gossamer blown along in the sunlight. Against the dull pale yellow of the bamboo jungle the bird is hardly noticeable, unless, as is rarely the case, it flies high enough to get against the green tops instead of flitting in and out amongst the yellow stems.

After I had had him with me for about eighteen months, I got my white dandy a little red mate of a wife and they soon palled up and became quite a devoted couple, but they never shewed the slightest inclination to build or undertake the cares of a family, though she dropped one or two eggs on the floor of her aviary; for she, alas! was never tame like her husband, and had to be kept always in a cage, but it was a large one, well fitted with suitable places for building, a clump of pigmy Bamboos, living and thriving in a pot in a corner of her home. I never saw the male posturing or displaying in the cage

before his wife but he would do so sometimes in the spring when I was taking him round with me in the early morning.

On these occasions he always launched himself forth into the air off my head, and then, after flying a few yards would fluff himself out until he looked like a snowy powder-puff with a long-tail, and would gradually sink with extended tail and wings until within a few feet of the ground when he would rise again with rapid beats of his wings and then either repeat the same trick or else fly straight back to me and once more absorb himself in the business of his life—eating.

For his size he was a very greedy bird, and he never seemed really satisfied during daylight and he certainly ate four times the bulk of stuff in a day that his wife did, but he kept wonderfully well until I left him to go home, and then in my absence he fell a prey to a tame Civet cat that had, during my presence, always declared Paradise Flycatchers to be rank poison to it.

The nests of these Flycatchers are very beautiful; deep little cups of fine grasses and bents, neatly and compactly inter-twisted with one another, and ornamented freely outside with lichen, moss, caterpillar's cocoons, and with copious spider's webbing. Generally they are placed in a small vertical fork of a Bamboo or a small branch of a tree, in the case of *typica* most often of a Mango tree, but now and then one may be found in a horizontal fork. Always, however, they are very firmly fixed in and attached to the supports with the spider webs as well as incorporated in the materials of the body of the nest.

The full complement of eggs laid is four, hardly ever five, and almost equally, hardly ever three.

They are extremely beautiful eggs varying in ground colour from almost pure white, merely tinged with salmon or pink, to a warm, deep pink or salmon colour. The markings consist of specks, spots and blotches of red, reddish brown and reddish grey with a very few secondary spots of lilac or neutral tint, these being sometimes practically absent. As a rule they are disposed in an indefinite ring about the larger end, sometimes as cap and still less often sparsely scattered over the larger two-thirds of the egg.

As a rule the paler the ground colour the more definite the



markings, not only in contrast thereto, but in actual fact. Many of the deeper tinted pink ones only have the markings visible as a faint indefinite ring.

In shape the eggs are a broad obtuse oval; the texture is very fine and close, and the surface smooth and sometimes rather glossy, but the shell is fragile and brittle in proportion to the size of the egg. This, the size, averages .75 ft. by .56 ft. for one hundred eggs.

They breed principally in April and May, but I have seen eggs laid the last week in March and again as late as the last week in August.

Gungong, North Cachar, where my birds lived, was about two thousand, five hundred feet above sea level, but *Paradisi typica* is common all over the plains nearly, and *Paradisi affinis* certainly is found up to four thousand feet, if not higher. They are easy birds to feed, easy to tame and are patient of changes of temperature so they should not be difficult to keep even in the climatic variety show called England. In point of beauty there are few birds they do not excel and if some of their notes are harsh and discordant, some are quite pleasant and might almost be called beautiful.

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## FRESH AIR FOR BIRDS.

By KATHARINE CURREY.

The need of fresh air for birds, even those of hot countries, is now so well recognised that the few remarks I have to make here are merely added testimony to the fact that birds cannot live long or remain healthy without it. Even in the cold of our Northern climate I have found that so-called delicate birds, such as the Tanager, the Dhyal Bird of India, the Rock Thrush and Blue Thrush, can be hardened to bear the ordinary cold of an English winter and spring (but not a very bitter North or East wind, nor a cold fog) provided they have a shelter to retire to. Of course, great care has to be taken during moulting. It would be interesting to try a very gradual acclimatisation of tropical birds in England, in pure fresh air, and making use of every ray of sunshine.

Just now, my Indian Dhyal Bird and "American Robin" (*Turdus migratorius*) are vying with the Song-Thrushes in loud, clear singing; for they are out all day long flying about in their lawn aviaries, in perfect health, and enjoying their cold baths, in the March sleet showers and gleams of sunshine, while the Cambazan Turtle-Doves—out all the year round—are preparing to nest. The Dhyal Bird seems to sing the louder during the cold of Spring, when the great icy hail-clouds come drifting over the blue sky.

A short time ago I had a Blue Thrush that came to me in a sorry plight, and unable to moult properly. He was old and looked very miserable. I kept him indoors for a couple of weeks, in a room with the window almost always wide open, and gave him a tepid bath every day. Then his cage was moved into a South verandah, on to a table against the wall of the house, well protected at one end and over the top. At first he stayed under his shelter, then he hopped out and ventured into his bath for a moment or two. After a week he was able to stay out all day long, new feathers appeared—some white ones among them—and he began to utter some very sweet, loud notes, clear as a bell. His wits were considerably sharpened through being in the fresh air, and he had many engaging little ways. If he wanted a mealworm or more food (for he was voracious) he looked about for a little stone which he dropped into his drinking glass or he lifted up the latter in his beak and threw it down.

A Rock Thrush I had for many years lived out of doors, winter and summer, and his song and plumage were marvellously beautiful. The American Robin one very cold day lately opened the door of his cage and flew out. I placed his cage in the verandah and hoped for the best, but Spring is rather a fatal time in which to lose birds.

He flew all over the garden, into the orchard, over to a neighbouring garden, and late in the afternoon returned to the verandah and flew into his cage! It was home to him.

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## REVIEWS.

## AVIARIES AND AVIARY LIFE.\*

Mr. Page is too well known an Aviculturist to need any introduction to our readers and a book by such an authority on practical Aviculture is bound to contain a mass of information from which all of us can learn something. In the introductory chapter we are pleased to see that he lays great stress on the necessity of keeping a "Log-book" in which an accurate record of the doings of the birds may be daily entered up. This most important part of Aviculture is, we fear, sadly neglected. When birds are wild, and more especially in the less civilised regions of the world, it is almost impossible to devote the time and patience necessary to careful observations of their habits, we have not yet become sufficiently educated to prefer our collectors to bring back a well-filled diary rather than a well-filled bag, and thus the only source from which we may learn the courting and nesting habits of many species is from Aviculture. Many beginners may feel at a loss what to record about their pets, but in future such an excuse will be of no avail for the whole matter is carefully set out in the present volume. A large chapter is devoted to Aviaries, abundantly illustrated with photographs, many of these Aviaries will be beyond the means of most Aviculturists to copy, but smaller and more modest Aviaries are also portrayed as well as minute practical details of how they should be built and the approximate cost.

The rest of the book is devoted to different classes of birds and their needs in captivity, and a list of the main genera is given together with the English name of a well known species with which most readers are likely to be familiar. Roughly speaking, only the Passeres or small birds such as Finches, Thrushes, Flycatchers, Tanagers, Starlings, Toucans, Hornbills, Birds of Paradise, etc. are dealt with in detail and the larger birds merely touched upon in the last three chapters. The author has evidently been pressed for space, but we feel that in a general book such as this some of the detail and classification might have been

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\* *Aviaries and Aviary Life* by WESLEY T. PAGE, F.Z.S., 8vo. 239 pp. and numerous illustrations. Ashbourne: J. H. Henstock, The Avian Press.

omitted and the larger birds given a more generous amount of room. Everything given is, however, useful, and in heartily recommending this book to our readers we hope that they will give Mr. Page their practical support in order that he may bring out a second book on the subject as foreshadowed in his preface. The photographs, which are numerous, are for the most part very good, but a few might, with advantage, have been omitted.

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#### THE AMATEUR MENAGERIE CLUB.\*

Last year there came into existence, somewhat on the lines of the Avicultural Society, the Amateur Menagerie Club, and they have recently issued in a neat little volume their first Year Book. This contains illustrated articles of various animals such as Park Cattle, Notes on British Mustelines, Monkeys, British Wild Cat, Sheep, Ostriches, Chamælons and Reptiles.

It also contains the Rules of the Club and the winners of the Club's Medals. The medals are awarded yearly (1) for successfully breeding the animal, bird or reptile, which is rarest and most difficult to breed, and (2) for importing and keeping alive for at least three months, the animal, bird or reptile which is rarest and most difficult to keep in captivity. The Objects of the Club are (1) to encourage the keeping of wild animals, (2) to help members with advice, (3) to circulate among members a list of animals for sale. We have much pleasure in wishing this Club a long and prosperous career, which, if it receives the support it deserves, should be assured and any of our members who would care to know more about it, should communicate with the Secretary, Mr. G. Tyrwhitt Drake, Cobtree Manor, Maidstone.

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#### BRITISH BIRDS.†

The chief article of interest in the June number of this periodical is the separation, as a distinct race, of the Lesser Black-backed Gull, which breeds in Great Britain and apparently differs from the Continental form by its paler colour on the mantle, scapulars and wing coverts. The difference is well

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\* Year Book of the Amateur Menagerie Club, illustrated, 1/6: to be obtained from the Secretary, Cobtree Manor, Maidstone.

† *British Birds*. June, July and August. Monthly 1/-. London: Witherby & Co.

shown in the plate which accompanies the article, but the specimens figured are apt to be misleading as while the British example is in full summer plumage, the Continental one shows a lot of colour on the head and neck, a sign of immaturity or winter plumage. With this number the Editors, as previously announced, insist on the International Rules of Nomenclature being adhered to and all our native birds now appear under their new cognomen's; as a result of this a serious source of error is likely to creep in since almost every bird is recorded under a trinomial, even if the bird is only seen and not handled and there are few races that can be identified with certainty in the field.

The article in the July number is a translation of Sibbald's *Prodromus* published in 1684; the original being written in obscure and somewhat involved Latin. Mr. Mullen's translation of this interesting work is very acceptable. A review of Mr. Eagle Clarke's recent work on Migration forms the article of the August number.

All the numbers contain, as usual, a large number of short notes relating chiefly to the occurrence, or nesting of rare and local species.

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#### THE EMU.\*

In the April number of *The Emu*, Mr. McLean continues his most interesting account of the Bush birds of New Zealand, illustrated by some photographs of the typical haunts of the birds as well as of their nests and eggs. Mr. Whitlock sends a further account of his zoological researches in the Stirling Ranges, W.A., also illustrated by some excellent photographs. Among the many other shorter articles and notes we may specially notice as being of interest to Aviculturists the acclimatization in one or two districts of the beautiful White Torres Strait Pigeon (*Myristicivora spilorrhoa*). This bird which is seldom (if ever) imported into this country should make a very suitable aviary inmate and seems to be quite hardy. At Brisbane and at Herberton, N.Z. they have complete liberty and do not appear to wander far from where they have been turned out.

In the July number Capt. S. A. White contributes a num-

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\* *The Emu*, Journal of the Royal Australasian Ornithologist's Union. April and July, 1912. London: E. A. Porter.

ber of interesting Field Notes on S. Australian Birds and Dr. Cleland writes a valuable article on the stomach contents of a large number of birds that he has examined, a branch of Ornithology that is much neglected in this country. Mr. Banfield's notes on the Metallic Starlings (*Calornis*) deal chiefly with their habits and food, which appears to be exceedingly varied. Mr. Banfield also noted that their digestion was very imperfect and suggests that this species must in consequence play no small part in the distribution of seeds. Mr. Bell writes a good article on the Nesting of the White Tern (*Gygis*) which is illustrated with photographs showing the curious arboreal nesting habits of this species. The present number contains many other interesting articles and notes which lack of space does not allow us to refer to.

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## CORRESPONDENCE, NOTES, ETC.

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### THE WHOOPING CRANE (*Grus americana*).

SIR,—In the present, and previous, issue of the *Avicultural Magazine*, mention has been made of this most beautiful creature, and it occurred to me that a photograph and a few words of praise would not be out of place, and would perhaps be welcomed by lovers of Natural History.

In the first place, it is most gratifying to hear that a small flock of them has been seen lately in their native home, and that they are not yet exterminated, as we were under the impression that the few in confinement were the only living ones left.

The photograph gives a good idea of the bird in this collection. Purchased fully adult in December 1892, it still looks as strong and well as ever, and is one of the most sociable creatures one could wish for; being very tame and always ready to take food from the hand. It welcomes you with a graceful bow, and weather conditions make no difference to it. I suspect it to be a female, since it is constantly in close companionship with a male Canadian Crane (*Grus canadensis*), but, as the bird has never attempted to nest, one cannot be certain.

When showing off it stands upright and then takes very slow, long majestic steps, until it reaches its imagined enemy; after taking a good look it turns round and regains its former position to seek for other objects which may require inspection. The call note is quite different from that of any other Crane, being much more musical, and not nearly so loud as some of the other species of Crane.

R. COSGRAVE.

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Photo by R. Cosgrave.

THE WHOOPING CRANE  
(*Grus americana*).

West, Newman proc.





## THE FEEDING OF LORIES.

SIR,—From time to time I have sent a few notes to the *Avicultural Magazine* on the feeding of Lories, and I believe my method of mixing barley water with the milk, whether fresh or condensed, has been followed by several other keepers of these birds with good results.

Recently I have been trying another method of feeding, and, from the results obtained, I think I am justified in reporting it to the members of the Society.

Marmite sop made with barley water, sweetened, and a little sponge cake added is the food I have been trying. The idea of using Marmite sop was given me by a Member of the Avicultural Society, but as a food for a different class of bird.

The advantages of Marmite over milk are that there is no risk of the food going sour in the hottest weather, and fresh fruit can be safely given.

The suitability of this food for Lories was brought to my notice in the following ways:—In the first instance, I had reason to place a Red-crowned Hanging Parrakeet into the same aviary with a Fruit Sucker that was getting Marmite sop, and I soon noticed a great improvement in the *Loriculus*. On another occasion I placed a pair of Lories that were not looking well into an aviary containing Tanagers and a Fruit Sucker. The Lories soon forsook their milk sop for the Marmite and are now looking better than I have ever seen them. A third instance was an *Eos fuscata* that I thought was certainly going to die. The diet of this bird had been changed from fresh milk to condensed milk and then to a malted milk but without any good results. As a last resort Marmite sop was tried and the bird is now as well as possible.

All my Tanagers, Fruit Suckers and Sugar Birds get some of the sop and the Sun Birds get a little in their Horlick's Milk, with first-class results. I think from this that Marmite is a wholesome food for honey-eating birds, and probably an improvement on the usual milk diet.

E. J. BROOK.

## TUBERCULOSIS IN CRANES.

SIR,—I should like to inquire whether avian tuberculosis is a common disease with Cranes. The disease is of course very rare in this country, but I lost two birds from it (a mated pair of Demoiselle Cranes) last spring. I had had these birds myself for about two years, and it seems as if they must have had the disease during this whole period.

There is no question about the diagnosis as the livers of the birds were carefully examined by a well-known pathologist at the Harvard Pathological Laboratory.

JOHN C. PHILLIPS.

Wenham, Mass.

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OFFICERS FOR THE YEAR 1912-13.

At the Meeting of the Council, held on June 21st last, Major R. B. Horsbrugh and Mr. Arthur Denman were elected members of the Council, to replace Miss R. Alderson and Mr. W. H. St. Quintin who retire by rotation in accordance with Rule 9.

Mr. W. H. St. Quintin was appointed Scrutineer and Mr. Percy W. Farmborough Auditor.

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THE SOCIETY'S MEDAL.

A medal has been awarded to Mr. W. E. Teschemaker for breeding the CRESTED LARK (*Galerita cristata*), the account of which appeared in the August number, p. 273. The same gentleman is apparently entitled to another medal for breeding the BLACK REDSTART, the account of which appears in the current number.

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EDITORIAL NOTE.

The Editor regrets that, owing to Mr. Seth-Smith being away for his holiday, the monthly 'Zoo Notes' do not appear.

An unfortunate error crept into the last number, the author of the interesting article on 'Aviary and Nesting Notes' was Mrs. Knatchbull Connell and *not* Mrs. McConnell.

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PRACTICAL BIRD-KEEPING.

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XIX.—THE GAME BIRDS.

By W. H. ST. QUINTIN.

I have been asked to contribute suggestions for keeping some of the Game Birds, founded upon my own experience, to form part of the "Practical Notes" which, for some months, have been a useful feature in our Magazine. Valuable papers have from time to time appeared in past numbers, relating to the Management and especially to the Breeding of some Families of

this extensive order, notably, Mr. Seth-Smith's upon the Quails and Hemipodes, and as I do not wish to go over old ground, I will confine myself in the main either to such species as are less often kept, or in the Management of which special difficulties appear to have presented themselves.

As a preliminary, I would remark that, in the Management of Birds of this Order, much will depend upon the character of the soil upon which the birds are to be kept.

Many of the difficulties which beset the aviculturist who aspires to keep the more tender species, disappear if he is so fortunate as to possess aviaries or enclosures upon a light soil, in the composition of which sand and gravel predominate. This applies more particularly to aviaries. In these the birds necessarily 'work' the same piece of ground very intensely—Especially up and down the boundaries, whether of wire netting or other material, they are apt to make runs and paths which, if the soil be sticky, seriously affects the beauty of their plumage. It is a sad sight to see a fine Reeves or Amherst Pheasant trailing his train feathers in the mud as he fidgets up and down the fence of his run.

When I was experimenting with Partridges, with a view of getting them to lay in pens (for sporting purposes) on a system elaborated on a shooting in Central France, I found that one feature was that the pens should be circular, with no angle, and with the bushes or other cover in the centre and open space all round. This tended to check this habit of restlessly running up and down, turning always at the same spot, a very important point if the captive be a long-tailed pheasant, who often treads upon his own tail as he turns at a right-angled corner.

If I were ever to keep pheasants in aviaries or small pens I should certainly make the fence of the runs, where the birds chiefly take their exercise, round, or half-moon shape. Their plumage would certainly last much better, and the extra trouble involved would be well repaid, especially where the soil was strong.

But to keep some game-birds in health, not only is a light soil desirable, but ample space is absolutely essential. Capercaillies, for instance, and to a lesser degree, Blackgame,

must have abundance of room. They want plenty of clean ground to range over, with dense cover at hand to which they can retire, so as to feel absolutely safe.

I think an adult wild-caught Capercaillie is about the most difficult subject to deal with that I have encountered. He will not stand close confinement at all, and must as soon as possible be enlarged. The difficulty then is to prevent his being starved in the midst of plenty, for it is of no use to put food down where he dare not venture to get it. Hand-reared Capercaillies are seldom to be had, and it may be taken for granted that a wild-caught bird will not for a considerable time ever leave the thick cover, of which there must be plenty, for many yards.

The grain (oats, peas, wheat, barley and a little maize) must be thrown down with the grit along the outside of the bushes, the pine branches stuck into the ground and the water-pens replenished, then the feeder should slip away and the birds must be left absolutely quiet. It is of course a great thing if some tame birds are already in the enclosure, as they will inspire confidence in the new comer. I found it useful to fit up a "hide" into which one could get, so that one could judge how the birds were going on, but the screen must be a good one, and one must never be detected in it, or when leaving. In time Capercaillies will tame, and are always most interesting; but a particularly fine old cock was here almost three years before he would come out into the open to feed in our presence. It was a fine sight then to see him in the spring slowly walking round his hens, at feeding time, with tail spread and wings lowered and neck-frill standing out stiff. My Capercaillies and Black-cocks called freely in the spring, but I never saw anything that might be called a "Lek" in any special place; perhaps because the birds were pinioned and the number of hen birds small. Although my enclosure is roomy (nearly four acres) I could not keep more than one, or at the most two, Capercaillie cocks, owing to their pugnacity. Blackgame are not quite so shy and do not require so much space. But neither will they live long in such runs as suit ordinary pheasants well. I recollect the late Lord Lilford telling me that, with all his experience, he had never been able to keep Capercaillies, and that only in one

year did his Blackgame really thrive, and that was when they had the run of a large walled-in kitchen garden. This suited the birds admirably, but their ravages among the strawberries and green vegetables were so serious that the experiment could not be repeated.

All Game-birds that I have kept, including Grouse, have taken readily to Mangel-Wurzel roots, and during the winter and early spring months they are a most valuable food. But in frosty weather they must not be left out at night, or must be rolled under some dense bush, so that they do not get frozen. Coarse and fine grit and plenty of water are necessities to all Game-birds. In my enclosure there happens to be a clear running stream, which of course is a great advantage as it prevents the possibility of soiled drinking pans. Capercaillies and Blackgame feel the heat of summer, as might be expected, and must have plenty of shade. My Blackgame roosted in long grass near the stream, but the Capercaillies perch. Being heavy birds, when pinioned they are apt to injure themselves if disturbed from their roosting-places or while coming down in the mornings. It is advisable, therefore, to take off the lower branches of bushes or trees which may tempt them up to dangerous heights; and only leave such bushes and lower trees as are safe accessible to them. I once had a Capercaillie cock killed owing to a stranger passing under his tree and causing him to fly off his perch after dusk. My Capercaillie hens generally made their nests, as they so often do in the wild state, against the bole of a tree. They cover their eggs, and so cleverly do they conceal the nest that once a Capercaillie hen, by scraping out a hollow, managed to prevent us from finding her nest on perfectly bare ground under a beech tree, till one day we unexpectedly found her incubating.

Keepers sometimes advance a theory that grey hens do not lay till the third summer after they are hatched. Long ago I had clear evidence that this is not correct in regard to Capercaillies, and it seemed unlikely that their smaller relatives would be slower to attain maturity. But since I have kept Blackgame I found that they too will breed in their second summer. I believe the reason why so considerable a proportion of grey hens

is sometimes seen without young is that, while the birds seeks damp rushy places to nest in, the chicks are exceptionally delicate, and their survival greatly depends upon the sort of weather which they have to face during the first week or two of their lives.

Redgrouse have been often kept in a half-tame condition, and more than once in recent years they have been bred in confinement. This has always I think been achieved in places where a supply of heather was available to augment their food. But I have no heather within reach, and my Grouse had to be content with meal, green stuff and bird seed (Canary and hemp), with such grass and clover as they found in their enclosure. I had a hen Grouse for over three years, which during that time never saw heather. Her habits of course altered considerably under such artificial conditions. She would, in wet weather, roost on a lower branch of a box tree, and I have seen her busily breaking up and eating an acorn.

Grouse are charming pets, and the cocks become almost troublesomely bold and aggressive. A full-winged tame cock Grouse that I used to know on Spey-side would fly in the face of any stranger in the spring-time.

I always expected that Willow-Grouse, from living on a more varied diet, would be more easily managed than the British Red Grouse, and when I obtained a small lot in 1908 I found this was certainly the case. We never had the slightest difficulty in keeping them, as they would eat all that a Red-Grouse would take, and, in addition, Birch, Sallow and Beech, foliage and twig ends. Though wild-caught birds, sent direct from Sweden, they would, in about three weeks time, run towards one at feeding time. My first birds all proved to be hens, but, nevertheless, four out of the six laid the first summer. The following spring I succeeded in getting some cocks; but, afterwards, though we hatched young, and a pair which I presented to the Zoological Gardens reared a small brood, a severe visitation of "gapes" not only prevented any further success that season, but obliged me, much against my inclination, to give up keeping any more of the Grouse family.

Although, under the supervision of the Committee of

Enquiry on Grouse Disease, some 2,000 birds were dissected, and only in three examples were gape-worms (*Syngamus trachealis*) found; yet as the Committee report: "This freedom from the common pest of the Fowl-yard and the Pheasant coop is due to the free and unconfined life of the Grouse, together with the comparative paucity of earthworms on the Moor." That the above explanation is probably quite correct my experience shows, for in captivity I have found Grouse and their allies exceptionally subject to the parasite. For several years in succession, the "gapes" first affected the birds of the Grouse family in my collection; Grouse and Willow-Grouse, Blackgame, Capercaillies, then Partridges, Pheasants, Impeyans and Tragopans (I place the names in order of susceptibility), and finally it spread to other species including Bustards and the young of two species of Crane. In the cold weather we had no difficulty in keeping all these species in health, but with the warmth and drought of summer, in spite of free use of quicklime, etc., the pest regularly showed itself. Therefore I had to cease keeping some of my greatest favourites. I hope only temporarily.

When Pine branches are required for Capercaillies and Blackgame, or Sallow or Birch for Willow-Grouse, it is a good plan to sink champagne bottles filled with water up to their necks in the ground, and to stick the branches therein. If this is done in a shady place, the foliage will keep fresh for some days even in summer. I have found Austrian Pine preferred to Scotch Fir, and my birds would never touch Larch foliage; though I believe in Scotland the contrary has been noted,

I once had four hybrid chicks hatched from eggs laid by a tame Redgrouse mated with a Blackcock. Circumstances necessitated their being placed with the ordinary Pheasants in the rearing field, and I believe they were exposed to too much sun, which, in a hot summer, is a source of danger to these natives of cool uplands, and they only survived a few days.

I now pass to the Tragopans, than which there are no more interesting Game-birds. I have for some years kept examples of three species: Temminck's, Cabots' and the Satyr Tragopan. I have bred them all repeatedly. They require shelter throughout the year, such as they can find for themselves

in summer in thick Yew bushes, or Spruce trees headed back. But in the North of England at any rate, I find they are better shut into dry sheds in winter, with a peat moss floor and plenty of rough perches to climb about on. Like so many mountain species, whether mammals, birds or plants, Tragopans when brought down to low altitudes, seem very sensitive to damp cold, though they look happy enough on a dry frosty day. Mine get, and I think require, a variety of food—wheat, barley, hemp and Canary seed, green stuff and any common fruit that is available. Of monkey and tiger nuts, Tragopans and Monals are very fond, and also mine get like most of my birds Barley meal scalded with Poultry meal into a “crumbly” mass. I do not think Tragopans will live long upon hard grain alone. When first imported, Tragopans are sometimes difficult subjects, and must be tempted by raisins, earth worms, soaked maize, or in fact anything that they will eat. The young cocks do not come into colour till the second autumn, but before the first winter there will generally be a few feathers of the second plumage about the head and neck, enough to indicate their sex. The hens will sometimes lay in their second summer, but more often not.

The full display of the male Tragopan has often been described; it is a wonderful sight, though not often visible even to its owner. The letting down of the gular flap is momentary, and the bird seems shy of exhibiting this when conscious of being watched. The more common partial “show,” when the throat wattle swells and the wing is dropped to show the beautiful spotted feathering to the female bird, can be seen at almost any feeding time till the female begins to sit.

One of the peculiarities of the Tragopans, or at least the three species above named, which alone I have kept, is that they, invariably in my experience, lay their eggs, not on the ground like other Game-birds, but in trees and bushes, or disused nests of other birds such as pigeons, or even in structures of their own making. A Cabot's Tragopan once somehow discovered an old Stockdove's nest, 17ft. from the ground, in some ivy on the stem of a spruce fir. The latter was bare of branches, so that the bird had to clamber along the spreading bough of a neighbouring yew tree, till she could spring to the ivy.



But little has been recorded of the habits of the Tragopan in the wild state, and this propensity was a surprise to me. Therefore at once we began to put up old Wood Pigeons' nests or platforms, generally five or six feet from the ground. To these the birds have always made slight additions, generally in the shape of a lining of yew or spruce twigs. But though these platforms are freely taken advantage of (and I must have had well over fifty clutches of eggs laid here), on one occasion a Satyr Tragopan declined our help and made rather a frail platform of spruce twigs and branches, on which she laid her eggs. An old basket lid, covered with a layer of roots and twigs, and firmly tied into the fork of a bush will make a good nest. A lame, but otherwise healthy Cabot's Tragopan this year did not lay till she was provided with a mound like a large footstool, hidden under a bush, with a depression on the top some eighteen inches from the ground, which she could easily reach. This was taken advantage of at once. I believe Tragopans to be by nature monogamous, but in this last case the lame hen was one of two, both of which laid fertile eggs to a single cock bird.

Tragopans are quite at home in trees, and climb and run up a sloping branch without making a mistake. My birds spend much of their time, especially in wet weather, on their perches, and the young fly up and spring from branch to branch within a few days of hatching, and are very well provided with flight feathers at a tender age, as I have elsewhere recorded.

After a few weeks the young Tragopans, like the Monals, show an inclination to perch at night, and as they are by that time probably too large for the hen (if they are hatched under a foster mother) to properly brood. It is best to run her into a dry shed at night provided with perches of various heights. I have always taken the eggs and hatched them under small hens, Silkies and Game Bantams, as the clutches are small, two or three eggs, generally the former, and this probably induces the bird to lay again. After ten days or a fortnight, the young thrive best if allowed to run free during the day with the hen in some quiet place where the grass is allowed to grow long. Fresh ants' eggs, gentles, chopped egg, lettuce and meal, and when available, red currants or raspberries are all suitable food.

This faculty of climbing about trees renders it necessary to take great care that no bough of a tree within the enclosure extends to the fence, or the birds will probably escape, as they will creep out to the end of a slender branch and spring thence to a surprising distance. For the same reason, if kept in open enclosures, Tragopans must be rather closely pinioned.

The only member of the group of Monals that the amateur is likely to admire is the magnificent *Lophophorus splendens*, and it is scarcely possible to conceive anything more splendid than a well-conditioned male bird of this species, and, fortunately, their plumage is hard and they generally keep themselves smart. Much that I have said about Tragopans will apply to Monals, especially as to variety of food. But this is a much more hardy species, and though it is well to give shelter to the birds of the year in their first winter, the adults can stand any reasonable amount of cold, and if, as all wild creatures try to do, they can avoid the combination of wind and wet, they will get through our winters well enough.

The hen Monal makes her nest on the ground, and my birds have laid two or three eggs. They are excellent parents and will rear their young quite well if in an enclosure by themselves where there is plenty of cover and shelter from storms. It is a pretty sight, when the young begin to perch, to see the parents sitting with the young between them, each spreading a wing over the chicks; the cock taking his full share of the domestic duties.

Care must be taken to separate Monal cocks as the breeding season approaches. They appear heavy, rather stolid birds, but a strong male will persecute a weaker one with great determination, even in a large enclosure. I once missed one of two Monal cocks which had passed the winter together quite amicably. When we discovered the poor bird, he was several feet up a 9-inch drain, in which he had taken refuge; but he had been sadly maltreated and was already dead.

A cock Monal once contrived to mount nearly forty feet up in a Beech tree. He was to be seen for quite a week on a conspicuous dead branch, apparently going through a sort of display performance. Occasionally he would crouch down on the bough

and utter the curious twittering whistle which is so strongly out of harmony with the bird's powerful build and sturdy appearance. We never saw him down at feeding times, but no doubt he descended occasionally. It reminded me of Wolff's famous picture of the Capercaillies' display on the pine bough, but I have always considered that our subject is strictly monogamous.

The cock Monal's ordinary display is striking enough. His chestnut tail is spread wide and brought forward rapidly over his back and withdrawn with a curious waving movement, while his wings are lowered so as to expose the white patch on the lower crest. He twists his head sideways and flattens his neck plumage so as to show the glorious metallic lustre to the best advantage. This part of the performance may be at some distance from the hen, who is, however, always visible to him. Presently he will advance towards his mate with a swaggering stride, with crest nodding, finally reaching her side by three or four frog-like leaps, and bends down touching the ground with his beak, with tail still extended to the full, the hen bird all the while, to the eyes of the human observer at all events, appearing utterly unconcerned.

With regard to the large family of Pheasants and their allies, I have little to suggest that is likely to be fresh to my fellow aviculturists, as these birds are so extensively kept. The true Pheasants all appear to be perfectly hardy in our climate, and to my eyes they show no substantial differences of constitution or habit from the ordinary bird of our covers. But it must not be expected that they will be so prolific as the latter, for no doubt the power of producing 30—40 or even more eggs in a season is the result of semi-domestication, and of being kept for generations in pens to lay and not to hatch and rear. I have found *Versicolor* hens very poor layers, and pure Mongolian hens often lay very scantily, if at all in their second year, but much better in succeeding seasons. Keepers report favourably of the Prince of Wales' Pheasant as a hardy bird to rear, and as a species which leaves its impress (in plumage) upon his cross-bred stock for many years.

As to straying, I can see no difference; they all like to escape from overcrowded ground.

The Partridges usually obtainable are all easy enough to keep, even the beautiful *Ammoperdix* of the Desert; but the young of the species from the warmer regions are, as might be expected, very sensitive to damp, and all, whether adults or young, should have access to dry sheds, in which they can dust and shelter. I have not kept any of the Wood Partridges, and expect that they require very special treatment. Peat Moss litter makes an excellent floor for such sheds as it is absorbent and a deodorizer. Unless the ventilation is really effective, fire-heat, unless in exceptional frosty weather, is better dispensed with.

If I may offer one or two pieces of advice, I would urge that it is a great mistake to keep too many birds. Overcrowding leads to tainted ground and a host of trouble. Grit must never be forgotten as it is absolutely essential to this class of bird. A Grouse chick of forty-eight hours was found to have its gizzard well provided with grit (Report of the Committee on Grouse disease). Quartz grit is the best if to be had. After the first severe frost, lettuces and even cabbages are often unprocurable, and, until the grass grows freely, some substitute for green food is desirable for grain-fed birds. I find Mangel-Wurzel most useful, and take care to have a supply sufficient to last well on into the spring. But, as I have already said, care must be taken that the roots do not get frozen.

The incubation periods of some of the birds referred to in this paper, as noted by me, may interest some:—Capercaillie, 26 days; Blackgame, 25—26 days; Redgrouse, 20—21 days; Willow Grouse, 20—21 days; Monal, 28—29 days; Tragopan, 29 days.

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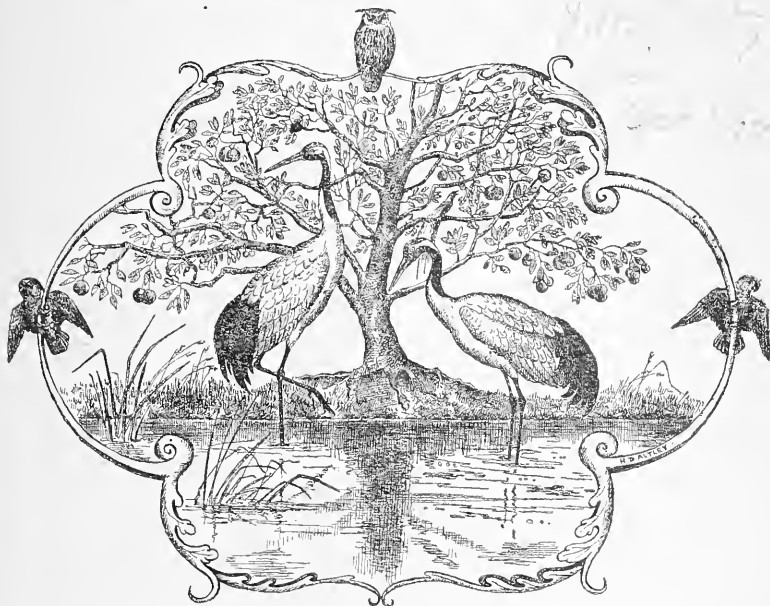
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AMERICAN NONPAREIL BUNTING.

*Cyanospiza ciris.*

THE PINTAILED NONPAREIL.

*Erythrura prasina.*

# Avicultural Magazine,

BEING THE JOURNAL OF THE  
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## THE TWO NONPAREILS.

*Cyanospiza ciris* and *Erythrura prasina*.

By FRANK FINN, B.A., F.Z.S.

From the point of view of pure aviculture—by which I understand keeping birds because one likes them, without any ulterior scientific motive—there are no small finches which I prefer to the Nonpareil of America and its Pintailed imitator from the far East. Colour appeals to me more than anything else, and no one can deny that these two birds have plenty of it, albeit rather differently laid on.

Their status in the bird trade has changed curiously. In the early days of this Society the American bird was the common kind, and the other rarely imported and little known. Now, owing to the prohibition of the export of United States birds, the American Nonpareil has become comparatively scarce and expensive, while the Pintailed has during the last few years been so freely imported that it has been the most cheaply obtainable of all bright-coloured birds.

The American Nonpareil (*Cyanospiza ciris*) is certainly well named; there is nothing like it in the way of startling brilliance of colour, laid on in such a way that the bird really does look as if it were painted. In fact, on my asking a small retail dealer whether he ever found Nonpareils were regarded with suspicion by the public, he replied that they were; in fact, he had been asked how he could have the face to keep such obvious frauds in his shop. The old belief in painted birds evidently dies a great deal harder than the practice, now all but extinct.

The hen Nonpareil never was common in the trade; her colour is a subdued green above and pale buff below; but many birds thus coloured are liable to turn out to be young cocks. Some hens, however, were recently on sale at Green's in Covent Garden for months; they showed no signs of being other than females, and I was surprised that they did not find purchasers. Although Nonpareils have frequently been bred on the Continent, few people seem to have tried them here, though the Rev. C. D. Farrar bred them in 1899 (*Avic. Mag.*, Ser. I. v., p. 165.) The young, he says, were reared entirely on insect food; but according to Keulemans (*A Natural History of Cage Birds*, 1871) they can be reared in a canary breeding-cage with egg-food and sugared sop by way of soft food! However they feed them, Continental fanciers seem to consider them easy subjects for breeding, judging from what Russ says (*Handbuch für Vogel-liebhaber*, as quoted by Dr. Butler in *Foreign Finches in Captivity*) about their breeding regularly two or three times a year, and the only objection to breeding them being the difficulty of distinguishing the young cocks. The full plumage is not attained till the bird is three years old—an unusually long time for a passerine bird. The nest is made in a bush or open basket, and the eggs are spotted with brown. One great drawback to this species is the fact that the cock by degrees loses its beautiful red tints and assumes yellow instead, though under conditions as natural as possible for an inhabitant of the warm parts of North America—a sunny outdoor aviary—the colour is said to be retained. Some difference of opinion exists as to whether Nonpareils have an undress plumage, going into hen feather in the winter; but the general verdict is that they do not, the replacement of red by yellow being permanent and due to unfavourable conditions, while the blue of the head remains.

At the same time, it is possible for a bird to assume, in captivity, a seasonal change unknown in the wild state; it is well known that the Scarlet Ibis (*Eudocimus ruber*) of America becomes very pale in captivity and remains so. Yet, of our breeding specimens in the Calcutta Zoo in my time, the hens were always salmon-colour, while the old cock had his salmon plumage enhanced by stains of scarlet in the breeding season

only. To return to our subject—the Nonpareil has a fairly good song, and will get on with most birds of his size, except his own species and his relative the Indigo-bird (*Cyanospiza cyanea*); he would probably dislike another cousin, the Rainbow Bunting (*C. leclancheri*), even worse. This species should always have fruit and insects—or some substitute for them—as well as seed. I noticed one I kept was keen on apple and on inga seed. He did not fight with an Indigo in the same cage, but gave way to him, only asserting himself in the important matter of meal-worms.

The Pintailed Nonpareil (*Erythrura prasina*) is also well named, for, although the two finches are not nearly related, the American belonging to the Bunting group and the Asiatic to the Grassfinches, there is certainly a resemblance in their liberal endowment of colour, while the long sharp tail of the Eastern Nonpareil is a very striking character. The hen in this species differs more from the cock than in the original Nonpareil, for though the red is less completely suppressed in her, remaining on the tail, though replaced by buff on the breast, the tail itself, though pointed, is quite short; she is, in fact, a stumpy ugly little bird altogether.

The coincidental resemblance between the two birds goes further yet; for in some Pintail Nonpareils the red of the plumage is replaced by yellow, as in the cage-moulted male of the true kind. In the yellow-tailed Pintails, however, this aberration of colour is found in the wild bird; it occurs in both sexes, and specimens may be found in any large series of live birds or skins. These resemblances, however, taken together, are very curious; caricaturing the theorizer on insects, we might say that the true Nonpareil, scarce yet reasonably easy to keep, “mimics” the very common but very difficult Pintail Nonpareil to escape the clutches of the aviculturist! This difficulty of keeping is a sad drawback to the lovely Pintail, a bird absolutely unrivalled in the feathered world for its combination of brilliance of hue with the delicacy of tinting which rivals the lovely colours of the rainbow or prism. Its cheapness is due to the fact that it is a very common bird in the East Indies—a common pest, in fact, in the rice-field; but it is a champion dier, and has a way of looking

well one minute and being dead half an hour later that has so far baffled research.

As I found it did not live any better in Calcutta than here, a warm climate and paddy-rice are not sufficient to keep it alive ; in fact, I may here remark that, according to my Indian experience, if a creature is hard to keep here it is equally hard to keep in its own country. Delicacy depends more on timidity or some other moral character, or on an unadaptable digestion, than on climate, though of course the quick change of climate undergone during importation does not make matters at all easier for creatures whose health is already below par by reason of close confinement, even if not actually recently captured. I should advise anyone who is trying to keep Pintail Nonpareils to endeavour to supply as great a variety of food as they can be got to take, in the hope of hitting on the essential thing. If they do not take to soft food, fruit, insects, or what not, such a bird as a Pekin Robin confined with them, or in a separate compartment with a wire partition, may teach them the trick, as bird gastronomy is largely a matter of imitation. Above all, let us not have people saying that we must not try to keep the bird, because it is cruel ; the creature is a pest at home, which would be killed if not exported, and nothing is easier or more common now-a-days than the trotting out of some lofty motive like humanitarianism to excuse the laziness and want of resource which are such a characteristic of over-civilized communities.

It is not surprising that the Pintailed Nonpareil has not bred here, though, according to Dr. Butler, it bred in Germany as long ago as 1886 ; the nest is evidently of the domed type usual in the Mannikin group, as it is described as thick-walled and with wide cavity and narrow entrance-hole.

In conclusion, I may here remark on the curious fact that this common bird is hard to keep and breed, while the nearly allied but rare Parrot-finch is an easy subject. I have so often noticed this in pairs of allies that I think there must be more than a coincidence in it ; and two explanations suggest themselves. One is that the rare bird finds the conditions of captivity more suitable to it than those offered by nature ; the other is that when a bird is dear people will take a lot of trouble over it,



while if rare it is not likely to be overcrowded during importation and so to suffer. If the latter explanation is correct the moral is obvious.

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## AUGUST, 1912.

By Miss E. M. HINCKS.

What a summer!—damp and cold—it seems almost as if it could not have been worse. My birds certainly have not relished it. The aviary floors have been soaking every day for months now. It seems to me the only type of floor suited to this weather would be one of cement laid at an acute angle.

My aviaries are small and my birds of quite ordinary kinds, of which I am thankful just now. There are three of them.

No. 1 containing five young Saffron Finches just coming into colour. Of these I hope that only one is a cock; for, earlier in the year, two other young cock Saffrons who had been living together for months, were left together for one day too long, with the result that they fought one another to the death.

No. 2. A pair of Goldfinches. The old pair of Saffrons, and, up till a week ago, a pair of Zebra Finches. Since then the cock has been left a widower and has been busily engaged in rearing the family of two, who appeared in public yesterday.

The third aviary is below the garden (terraced) inside the wood. It is much less exposed than the other two, but is also shadier. The beehives standing alongside should come in useful in providing insect food for my two Pekin Robins, though I cannot say that I have ever seen them in pursuit of anything but wasps, moths or midges. The occupants of this aviary are:—Two hen Pekin Robins, Grey Singing Finches, Avadavats, a Grey, an Orange-cheek and a Crimson-eared Waxbill, also one cock South American Grey Finch, the best songster of the party, but he is of rather a retiring disposition, always electing to sing whilst alone in the inner aviary house. The Cordon Bleu (or Gordon Blue, the gypsies name for these birds) must be quite an aged bird, I have had him several years and he is growing white (flight) feathers in both wings, which adds greatly to his venerable appearance. Is this usual?

Mice have been a great trouble this year. It is no wonder, as in the garden here the mice caught in traps are reckoned, not by the dozen, but by the gross. The aviaries should have been made mouse-proof, but this was too expensive. If a member could tell me of any hanging aviary seed-dish that is mouse-proof and thoroughly waterproof as well I should be most grateful. What mice are caught in the aviaries are accounted for by a fox-terrier who almost invariably accompanies me whilst feeding the birds. She is quite steady with birds, as they are with her.

I have planted hops and roses in my aviaries, in the hope of inducing green fly, but have never found a sign of it on either. This may be owing to the fact that the birds keep them clean, for there is no lack of the insect on the rose trees in the garden where they are not specially required.

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## NESTING OF THE BLACK REDSTART.

*Ruticilla titys.*

By W. E. TESCHEMAKER, B.A.

(Concluded from page 297).

Black Redstarts are not easy birds to procure at any time, and enquiries produced nothing more satisfactory than the statement that there was much snow in the south of Germany but no Blackstarts (it was the early spring of 1911) and a definite promise from one man that he would send me two hens in July. I closed with this offer after impressing upon my correspondent that hand-reared birds would be useless for my purpose and equally so birds taken at a high elevation in the mountains. In due course the "House-red-tails" were sent to a dealer in Berlin and forwarded thence to me; they were nice little birds, but there was nothing feminine about their appearance. But one day in the early autumn I received a post-card from the aforesaid Berlin dealer to the effect that he "feared that I might find that the House-red-tails which Herr . . . . . had sent were cocks, so he had taken the liberty of forwarding an adult hen." There is an innate courtesy about the German bird-dealer which might be imitated on this side of the Channel with great advantage.

It is usually impossible to keep two Black Redstarts or

two Redstarts together during the winter, even though they may have been the best of friends and have even paired, during the preceding summer. Unless the two birds are exactly evenly matched in strength one will assuredly slay the other; so Tites and the new arrival spent the winter apart. In the spring I caught up the female and caged her for a few days for inspection. The more I looked at that hen the more convinced I was that, if the correct environment were provided, she would prove a breeder. As mentioned above, I had already decided that the required environment would have to include a nest-box in a dark corner under a roof and I, therefore, selected a quiet corner of the old walled-garden aviary which was provided with a small shed about seven feet high. In the furthest corner of this shed a flat wooden ledge had been nailed up years ago, and on this ledge (which is shown in the photo) two South American Thrushes, which I believe to have been hens of two different species, had constructed a mud foundation for a nest. All that remained to do was to fix the nest-box under this ledge.

I first introduced Tites to these breeding quarters and, later in the spring, I caged the female and hung up the cage in the shed. I regret to say that Tites did not behave at all nicely to his prospective bride. His tail quivered with fury like the trembler of an induction coil: he perched on the top of the cage and in unmistakable and unparliamentary (?) language told the lady what he thought of her and what her fate would be. But the lady simply gazed at him placidly for well she knew—not only by intuition but by actual experience—that, for all his truculence, Tites would yet grovel at her feet; you see this was not her first experience of matrimony. On the fourth day I saw Tites talking to his partner quite politely, and then—and not before then—I opened the cage door. The next thing was to procure a counterfoil for Tites. There seems to be a conventional theory that the ideal method is to isolate each breeding pair of birds in a separate aviary, but a little reflection will convince us that this is a fundamental error. An insectivorous bird usually arrives at its nesting-station after a long and arduous migratory flight, during which food has been scarce, and almost at once enters upon a long and arduous struggle with various

rivals for a nesting-site and a mate; it is, therefore, as lean and hard as a trained athlete. It is this condition that we want to reproduce: if we shut up a pair by themselves we shall find that they will quickly become fat, sluggish and out of sorts. For a counterfoil I selected a pair of Pekin Robins, both because they were a little bigger than Tites and therefore not likely to be slain by him, and also because they would be certain to go to nest. Thus you will see that, instead of trusting to "luck," I based my calculations on environment, competition, suggestion, and lastly, but by no means leastly, on a breeding hen.

The Pekins soon went to nest but they were not allowed to hatch, in which case the state of war between the two families would have developed from a healthy recreation into a pitched battle. The next event was the building of a very neat little nest by Tites alone in the small nest-box (this nest can only be dimly seen in the photo). Then came a rather long interregnum and at last one day the hen House-red-tail glided into the nest that Tites built, inspected it and glided out again. The psychological moment had now arrived: I extracted the Pekins. On the 9th June the first egg was laid and the clutch of five was completed and incubation commenced on the 13th. It was not possible to inspect the eggs on account of the want of light, but I ascertained the number (and at the same time tested the statement in one of the bird-books that a Blackstart will always desert if the eggs are handled) by inserting a finger daily. The female undertook the entire task of incubation, but Tites sang to her to while away the time. The song of this species is quite unique: it consists of a low warbling interspersed with some curious guttural notes which sound as if they were produced by the winding up of some machine, the ratchet and pall of the winding drum of a grandfather's clock for choice. On the 25th, I picked up the half-shell of a hatched egg in the flight; it was very round, of a pure translucent white and with a peculiar gloss. Tites fed the young and also his partner with praiseworthy diligence. Having lost the feathers of the crown, as the result of a cat-raid, and having also suffered in many skirmishes with the Pekins, he was a most disreputable looking object, but his vitality was unimpaired and his energy immense. I extracted an unhatched

egg on the 29th, and ascertained that there were two young. It was impossible to examine the latter, however, in such a dark corner so, on the 4th July, I lighted a match and held it to the nest. As it happened, Tites at that very moment flew into the shed and apparently jumped to the conclusion that I was trying to cremate his offspring; he flew out again exclaiming in strident tones "Tit-tit-tit-tit-tit-er-er-tit," and was evidently very much upset, for, when I passed through the aviary again an hour or two later, he was still talking about the matter. However, I explained to him that the rule of this aviary was that all nests must be examined daily, and that, if he did not like it, he must make the best of it. The female was remarkably steady and would almost allow me to place my hand upon her when on the nest.

On the 9th July she commenced to build a new nest on the top of the mud nest above alluded to, and this nest, which she built without any assistance, was of a quite different type—large, shallow, unlined, and constructed entirely of hay; the first nest, which Tites built, was composed chiefly of moss, lined with some hair and feathers. The first egg of the second clutch was laid on the 11th, and it is this clutch which is shown in the photo. The dimensions were .80 by .62in. The young left the nest on the 12th, and their distinctive plumage interested me much. Their tails, which were about an inch long, and also the under tail-coverts were rufous\*; the flanges of the beak were lemon colour and, contrasting with their dark mottled breasts, were rather conspicuous. But what chiefly surprised me was that they were so much darker than the adult female in body colour. In such standard works as Morris, Bechstein, and even in the accurate Saunders will be found the statement that the young resemble the female, whereas, unless this was quite an abnormal case, they (that is to say the young males) really much more closely resemble the adult male on leaving the nest. And yet, in their first autumn, even a good judge will often have difficulty in distinguishing between the sexes. I recollect that our mem-

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\* N.B. The two middle rectrices are dark-brown: when the tail is not expanded, these two are the upper ones and their colour is apparently protective, covering and concealing the bright rufous of the other rectrices.

ber, Mr. Galloway, once sent me a supposed hen which, at the ensuing spring moult, declared itself to be a male, and Dr. Thwaites sent me the skin of a young male (as sexed by a taxidermist) which had died at the commencement of February, and a close examination of the plumage revealed no other indication of sex than the fact that the breast feathers were darker along the quill. The explanation seems to be that young male Blackstarts assume an eclipse plumage upon moulting the nest plumage, or some part of the latter. As I write (16th Aug.) the young have commenced to moult and are evidently becoming lighter, but I am prevented by our "eight weeks rule" (which for this very reason I have never thought a very wise one) from including an account of the moult in these notes.

A young migrating Redstart, which insisted on coming into the house, despite several evictions, and which was therefore caged on the 14th July, shed the mottled nest plumage a week later, and I think, therefore, that we may assume that this moult takes place in the case of both species at the age of about five weeks. The contrast between the young of the two species is, however, very marked. A young male Redstart looks very like a young Robin, but a young male Blackstart, as I have said above, closely resembles an adult male, except for the area of white on the wing of the latter. The Redstart began to sing on 17th July (three days after its capture!) and one of the young Blackstarts on 14th August.

The young "Horse-red-tails" were exceedingly clever at hiding themselves, after leaving the nest, and it was often very difficult to locate them even in their tiny aviary. As I mentioned, under the head of environment, this aviary was built in a corner where two old cob walls met, and into the crannies and crevices of these walls they used to creep and squat motionless; they would also squat in old nests in the shrubs and even on the ground. Another point that impressed me was that, even when perched in a conspicuous position on an apricot tree trained against the wall they would remain absolutely motionless, with tails held rigid, until they saw that they had been observed, when their tails would at once begin to quiver in the manner so characteristic of this species. With regard to this latter point:

I have often seen the statement that the tail motion both of this species and of the Redstart is horizontal. After very close observation I have come to the conclusion that the motion is (1) generally vertical, (2) sometimes diagonal, (3) sometimes elliptical, but I have never been able to convince myself that it is ever truly horizontal. Nevertheless it is not an easy matter to decide because the motion is so rapid.

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## ON THE BREEDING IN CAPTIVITY OF THE RED-BACKED SHRIKE.

*(Further Notice).*

By Dr. A. GÜNTHER.

The pair of Red-backed Shrikes—the history of which was recorded in the *Avicultural Magazine*, 1904 (page 339) and 1911 (page 37)—have again nested in the present year. This is the seventh brood produced by these birds in captivity. As already reported they did not nest last year, and I suspected they had reached the limit of age for reproductive functions. However, soon after they had been moved into their usual summer quarters in the middle of May the hen commenced to sit (20th May) and the young were hatched on the 6th of June. I had determined to remove the young from their aviary as soon as they were ready to leave the nest, as they were dangerously exposed to attack from their neighbours, a pair of Black-necked Grackles, which were separated from the Shrikes by wire-netting only. On the present occasion the young left the nest at the early age of twelve days. There were five of them, all remarkably strong. They thrive well under artificial feeding, and are now strong on the wing and perfectly independent.

To my surprise, two days after the removal of the young, the parent birds re-commenced breeding in the same nest; and two eggs were laid on successive days, when, to my great regret, the hen bird was found dead on the ground below the nest. The strain of producing the first brood, and shortly afterwards laying eggs for a second brood was too much for her and ex-

hausted her vital powers, although in the first year, when she was only one year old, she also had produced two broods.

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A pair of Black-necked Grackles (*Gracupica nigricollis*) inhabited the adjoining aviary. Nothing is known of the nidification and nesting habits of this species, and I was therefore anxious to obtain information on this point. They built a large nest of straw in a dense box bush, and eggs were laid but disappeared in an unaccountable manner. I strongly suspect that they were broken and eaten by the male bird, a most ill-tempered creature. Only fragments of the egg were found, and these were on the ground, showing that the eggs are of an uniform turquoise-blue colour.

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## THE TRANSPORT OF BIRDS.

By FRANK FINN, B.A., F.Z.S.

(Concluded from page 301).

If waterfowl or waders are shipped in barred-floored cane cages, it is a good plan to have a big tin bath made in which the lower part of the cage can fit; this will serve instead of a draw-tray to receive dirt, and can be washed out when decks are cleaned, while at the same time it can be filled with water in favourable weather and used as a bath, the cage being plunged into it.

In any case, it is advisable to wet the legs and feet of waders and waterfowl pretty frequently, unless the weather is too cold, to prevent them getting dry and feverish. A sprayer comes in handy for this sort of thing. For all sorts of bathing fresh water should be used, not salt, and all means taken to avoid birds getting wetted by the sea; even sea-birds do not like salt water so much as fresh for bathing. Gulls gladly resort to fresh-water streams and pools to bathe, if near the sea; and in hot countries Cormorants keep to fresh water and avoid the sea as a rule; while everybody knows it is only frost and fear of man which draws the ordinary ducks sea-wards.

At the same time, in the case of a water-bird that was



very dirty, it might be advisable to use salt water rather than nothing. On my first voyage abroad I relieved the monotony of life by washing the unhappy ducks in the ships' hen-coops in salt water, to the great improvement of their condition ; but then, being ordinary tame ducks, they could be let out on deck. Flapping and exercising to dry after bathing is of course important ; hence it is well to think twice before one wets the plumage of a bird cooped up.

Other birds than waterfowl are often somewhat special in their transport requirements, and these groups may now be dealt with.

Game-birds, such as the pheasant and partridge tribe, sandgrouse, and tinamous, are given to springing up with explosive violence on alarm, and hurting their heads. Hence the top of their cages should be well padded, or have a canvas ceiling strained a little below the wooden top. It is in their case especially that the allowance of as little head-room as is consistent with comfort is desirable. On the other hand, birds like Hornbills, which have long bills and jerk them up when swallowing, need more head-room than one would at first be inclined to allow them when the bill is in the usual horizontal position.

Large birds with long tails, like Pies and pheasants, are often better accommodated by having their trains clipped ; in the case of the cock Argus it may be necessary to clip the long secondaries also. It should be remembered that long-billed birds, and some short-billed ones also, which drink by scooping up the water as it were, cannot drink easily if at all out of a pot, and need a long vessel. If this is inconvenient for a cage, it must be introduced twice a day. Ground-birds with very small feet, like Sand-grouse, Bustards and Thick-knee Plovers, need a very close-barred wooden grating to the floor lest their legs slip through ; in their case it is best to substitute sand, saw dust, or mats frequently changed, if obtainable, though on the Chinese style of flat-barred cane floors with bars only half-an-inch apart anything could travel. Dusting accommodation for birds such as game-birds, can be dispensed with, just as water for water-bathing birds, during a voyage. But it is much more easily

supplied, and involves no risk, as if a box containing sand or earth is upset in a cage no harm is done, while superfluous water makes everything cold and sloppy.

Birds like Woodpeckers and Creepers, which travel on the trunks and limbs of trees, must of course have the back and sides of their cages covered with some sort of bark; or failing this with rows of horizontal battens. Woodpeckers have a most astonishing power of cutting their way out, and it would be best to have their box-cages tin-cased. Hanging-parrakeets (I always prefer the neat German name bat-parrots for these) need a wire-netting or grating ceiling below the roof in a box-cage, as they sleep and spend much waking time hanging upside down.

Birds like Kingfishers, Rollers, Bee-eaters, Trogons, etc., which hardly use their feet except for perching and do not hop about, need as large a cage as you can give them, with only two perches, one at each end on the same level, so as to give them as much wing exercise as possible. Humming-birds are also birds of little foot-power and need few perches, but have a remarkable power of taking wing-exercise in a small space; great care should be taken to keep their plumage from getting sticky, as without use of their wings they are nearly helpless, unlike Sunbirds which hop about freely. Humming-birds are more sensitive to cold than any others, and become insensible if chilled, though they can be revived by warmth in such a case.

We come now to the question of food. Of course the right thing is to take the special brand of soft food one favours, or material for making one's own, to say nothing of mealworms, as well as appropriate seeds for seed-eaters. Supplies, however, may be spoilt by sea-damage, lost or stolen; and we may be thrown again on our own resources for makeshift foods. In most places abroad it will not be possible to get ants' eggs, dried flies, dried silkworm pupæ, meat meal, egg flake, and what not; possibly not even Canary seed may be available; and millet, so common a grain in the tropics, does not suit everything.

It is as well, therefore, to rid one's self of any prejudice against using egg, raw meat, milk, or bread, for soft-bills, because these things can be got anywhere where Europeans live, and birds can be kept on them if carefully and thoughtfully

administered, and were, before our modern conveniences of feeding were introduced. Such crude articles of human diet may not suit some delicate species indefinitely, but one has, with care and luck in weather, a chance to pull any bird through a few weeks' voyage till the better supplies are secured ; and many species take quite well to the articles named. Bread of course should be stale, well crumbled and intimately mixed with the egg, which should be very hard-boiled, or the meat, which should be finely minced, or scraped for very tiny birds. Biscuit can, of course, always be substituted, and may be easier to get. Rice should be dry-boiled and grainy, as one gets it in the East, and milk-sop should not be sloppy, except for birds which suck up their food. Condensed milk alone is well taken by honey-sucking birds such as lories, sunbirds, and I believe humming-birds, and is easy to get ; in fact, it is in most cases the only milk one will get at sea, as cows and goats are seldom carried.

Meat cut up into bits is taken by large insect-eaters, and will keep the purely insectivorous kinds, such as land-kingfishers and rollers, by itself. Fish-eaters will also live on meat, though it is not good as a permanent diet.

Fruit-eating birds can be got to take dry-boiled rice and boiled potatoes cut up ; they can also have soaked bread and biscuit and soaked dried fruit.

Grain-eaters should be got on to crushed biscuit or stale bread in case grain or seed of the proper sort is wanting. A bird may eat some kinds of seed and starve on it ; I have been told this is the case with common pigeons when fed on paddy-rice. Green food can be supplied by chopped raw roots or apple, or sprouted seeds.

With regard to live food ; some kinds of tropical fish, such as the Koe ( *Anabas scandens* ) and Singee ( *Saccobranchus fossilis* ) of India, will travel well in but little water, and would come in well for feeding carnivorous or fish-eating birds ; cut up, they would be better for insect-eaters than flesh meat, being less heavy.

Earthworms will travel well in damp soil in well-cleaned kerosene tins ; frogs can also be transported in such tins with turf and fresh water. Water-snails should prove equally easy of

carriage, while land-snails are no trouble at all: put them in a box and they will seal themselves up away for hibernation or "æstivation," its substitute in the tropical dry season. Cockroaches can be got on many, perhaps most ships; the large American sort is the usual one, and is good for feeding large birds, the small German cockroach is, however, a nicer insect, and does well for small birds, but I only remember getting these on one ship. House-flies often abound in port or soon after leaving it, and it is as well to have a few balloon fly-traps. Crickets are also, if I remember right, numbered among ship-insects. So, certainly, alas! are those beastly little yellow ants, which birds, as far as I know, won't eat; while they will eat the bird's food and annoy them generally.

Mechanical digestives, like grit for ordinary, especially seed-eating, birds, and feathers or fur for birds of prey, can be temporarily dispensed with; but it is best to provide them if possible; chopped tow will do instead of fur or feather. If grit cannot be supplied regularly it is better withheld, and the birds weaned on to it again on landing.

Water can be dispensed with by some birds, such as Hawks, Owls, Kingfishers, Bustards, and Hornbills, but it is best to offer it daily even to these. Others should of course have it always by them, and in the case of waterfowl the food should be placed in it, especially for ducks.

With all our care in housing and feeding, however, there remains what I have previously alluded to as the most insuperable difficulty in bird importation—changes in temperature on the voyage, and especially the change from heat to cold. It is generally colder at sea than on land, in our latitudes very much colder; and a bird packed for shipment must necessarily be below par in most instances, owing to insufficient exercise and food which may not be of the most absolutely suitable character. Moreover it may have been only recently captured, thus, even if by nature an inhabitant of a temperate or even cold region—a mountain bird for instance—it is not in a condition to resist cold successfully; and hence as much warmth and comfort as can be secured should be a first consideration with all who import any kind of birds. It is in the matter of cold that failure is most to

be feared; heat may cause discomfort in some places, as in the Red Sea in the summer months, but if direct sun—which of course in the tropics is deadly dangerous—be avoided, heat is less risky than cold. A bird may be panting for days and not seriously upset; far otherwise if he has been shivering.

It must, therefore, be clearly understood, that success must depend to a very great extent on facilities for keeping the stock warm and sheltered; but, of course, the better the birds are fed, and the more comfortably they are housed, the better can they resist the ordeals that may come. But, on the whole, I think that small cages, which can be put inside somewhere, are far safer speculations in most voyages than large ones which must stand on deck, although in these the stock can exercise better.

With regard to attendance, one will, I should hope, always feed and clean one's birds one's-self: I always did, and welcomed the work as a relief from the monotony of shipboard life. But the functionary—butcher or "stock topass"—who is supposed to do these things, should in all cases be conciliated by a fee; his interest should be secured, and any money laid out in this way is well spent. But I object to letting these people look after birds if I possibly can—if any blunders are made I prefer to take the risk of my own rather than other people's; though, of course if there is much stock, or very dirty work, assistance is of some use. In the case of sending birds in the charge of a ship's butcher or other maritime employé, the same principle of paying well should be observed; parsimoniousness in these matters is fatal as well as unfair. The best plan is to give the man a lump sum and a percentage on sound arrivals. An intelligent and conscientious man, well treated, will get as good results, often, as one could one's-self.

A few words as to what to select in the matter of stock may not be amiss in conclusion. Throughout this article I have tried to provide for the unexpected that proverbially always happens; so I will assume that our importer knows little about the avicultural possibilities of the country he is going to, and little of the trade in the home country. I therefore advise, on general principles, avoiding anything one *knows* to be in the trade already, unless this is rare or usually arrives in poor con-

dition. But do not despise the common birds of a foreign country because they are common there; they may be, and often are, particularly uncommon in the bird trade, or even new to aviculture. Insectivorous birds are of course the hardest to manage, but on that account the most likely to be worth taking. Fruit- and honey-eaters are on the whole the best speculation, being usually attractive and not unduly hard to carry with good attention. Finally, on the whole, a small bird is to be preferred to a large one, a bright-coloured species to a dull one, and a collection of several sorts to a large lot of one kind. I am speaking, of course, for people who want to sell their surplus; for scientific aviculture I should say, specialize on birds of types not usually kept at all.

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## BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

During the past two months several of the birds in the Summer aviary have nested and reared their young. Bronze-winged Pigeons, Scaly Doves, White-fronted and Senegal Doves have bred freely. The two young Magpie Tanagers mentioned in the August number progressed well for a time. While I was away in August I heard that one had disappeared, but that the other had left the nest and was feeding itself. On my return we searched for the one young bird. The cover was so thick that it was difficult to find anything in this particular compartment, and although we did not discover the young Tanager I still had hopes of seeing it later. But now I have given up hope, and fear that the cold wet weather of August was too much for it.

In spite of the bad weather the pair of Crimson Finches brought off three young birds, which are now full grown and closely resemble their mother. A pair of Peale's Parrot-Finches have also reared two young birds. These are green with yellowish bills, exactly like the young of the New Caledonian Parrot Finch (*E. psittacea*). Both the Crimson Finches and Parrot Finches are nesting again.

The Douglas Quail (*Lophortyx douglasi*) from Mexico is an extremely rare bird, and the male with his plume of long reddish

feathers on the head is one of the most handsome of the Quails. The hen laid ten eggs in a nest in the thick grass, approached through a tunnel under the grass. She was apparently accidentally disturbed and refused to sit, so the eggs were taken and hatched in an incubator. The chicks which were if anything less in size than those of Californian Quails, were placed in a "Hearson's Foster Mother," and six of them have been successfully reared to maturity, a feat deserving of great praise on the part of MacDonald, the keeper who was entrusted with their care. The same foster-mother now contains fifteen other young Quails hatched from eggs laid by *Colinus pectoralis* and *Eupsychortyx nigrigularis*, both very rare American species. The young birds are about half-grown and in first-rate health and condition. Quails so often lay numbers of eggs, but refuse to sit in captivity, and the question of the hatching and rearing of the chicks is often a puzzling one. Hens are altogether too large for such frail mites, and the most careful ones rarely rear more than a small percentage of those hatched. It is, therefore, very satisfactory to find that the eggs hatch perfectly in an incubator at the same temperature as hen's eggs (104° Fahr.) and that with care the young can be reared in a "foster-mother." D. S.-S.

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### THE SOCIETY'S MEDAL.

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A medal has been awarded to Mr. W. E. Teschemaker for breeding the BLACK REDSTART (*Ruticilla titys*), an account of which appeared in the September number.

We regret that by inadvertence a medal was awarded to Mr. Cosgrave for breeding the LAUGHING KINGFISHER (*Dacelo gigas*) see p. 125. Although Mr. Cosgrave earned the medal, it cannot be awarded as he is not a member.

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### CORRESPONDENCE, NOTES, ETC.

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#### *NILTAVA CYANOMELÆNA?*

SIR,—When Mr. Goodfellow brought over the Mikado Pheasants for Mr. and Mrs. Johnstone, he also brought a beautiful *Niltava* from Southern China, which has come into my possession. Is it *N. cyanomelæna*? The

bird is the same size and style as the chestnut-bellied *Niltava*, but the colouring is even more striking. The crown of the head and the whole of the back is a brilliant turquoise blue, the wings and tail being darker, each feather edged with blue. Cheeks, throat and chest black; underparts pure white; flanks greyish.

This *Niltava* has an exceedingly sweet and varied song; some stanzas being not unlike an English Robin's, others more resembling the bird voices of the wild moors, as uttered by different Buntings and Pipits. Its notes are superior to those of its chestnut-bellied cousin.

My azure blue, black and white *Niltava* flies about in my bedroom of a morning, and is already becoming tame, darting down for a mealworm, which he will very soon take from my fingers. If it is *N. cyanomelæna* it is also a native of Japan. No doubt the female is a duller coloured bird.

HUBERT D. ASTLEY.

#### NESTING OF THE CRESTED LARK.

SIR,—I send you herewith a photo. of the second nest of the Crested Larks. It was not possible to photograph the first nest satisfactorily on account of the close proximity of a Yellow Wagtail incubating a clutch of eggs. This second clutch hatched on the 5th of August. The four eggs were much alike and do not resemble those of the first clutch; their dimensions are .89in. by .65in. I gave two young Larks of the first brood to Mr. C. Harrison, whose name was mentioned in my recent notes. For years past he has been making experiments with a view to obtaining a seed-eating bird which will correctly imitate the song of the Nightingale and, in my opinion, there is nothing so likely to perform the feat as a Crested Lark, caged as a "runner" before it has heard the song of its own species. These two birds differed markedly, one being larger, greyer and having more crest, the smaller one (which I took to be a hen) being much more richly mottled with buff terminals to the feathers of the back. They were extremely wild in the aviary and injured their heads severely, but became quite steady when caged. The natural flight of this species is of the rising and falling type, like that of our Skylark, and it was interesting to note that, while the young always flew in this way, the adults flew in a straight horizontal line, having evidently learned by experience that there was not room in the aviary for the former method.

There were several typographical errors in my notes, as printed, which did not occur in the MS. This was due to the fact that the latter was sent in very late and that there was not time to send me the proofs.

W. E. TESCHEMAKER.





Photo by W. E. Teschemaker.

West, Newman proc.

NEST AND EGGS OF THE CRESTED LARK.



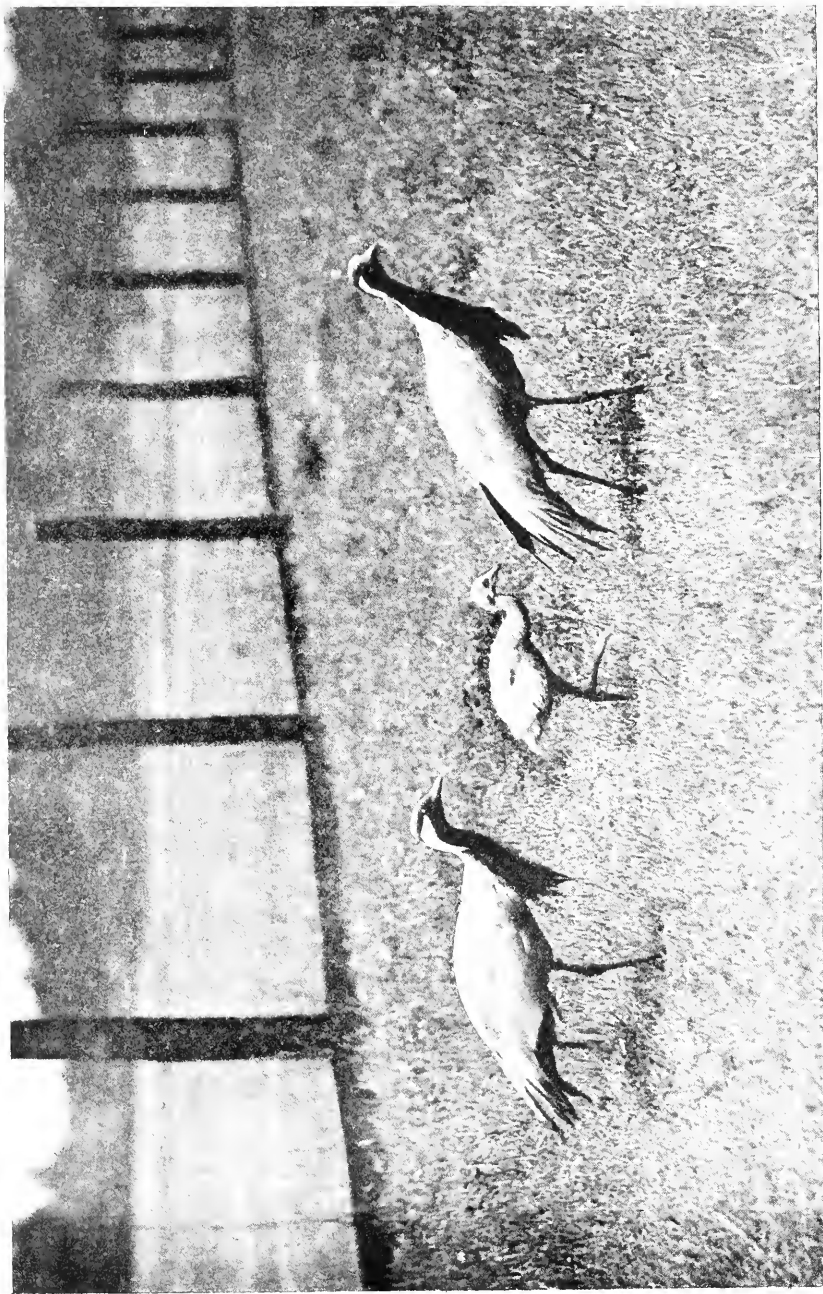


Photo by John C. Phillips.

DEMOISELLE CRANES AND YOUNG.

West, Newman proc.



## REVIEW.

### GAME BIRDS OF SOUTH AFRICA.\*

The second part of this book, which we have previously noticed in our pages is now to hand, and fully bears out the promise of the former part. It deals with twelve species of Francolin and four species of Quail, all of which are figured in a series of excellent coloured plates drawn by Sergeant C. G. Davies. The notes given under each species are clear and concise, so that no sportsman, be he ornithologist or not, should find any difficulty in identifying any bird he may get. The author seems rather doubtful as to the proper use of trinomials. He uses them, quite correctly in our opinion, when dealing with the two races of the Red-necked Francolin, but treats the Orange River and Büthkoger's Francolins as distinct species. This technical error, however, does not in any way detract from the practical utility of the book.

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## PRACTICAL BIRD-KEEPING.

### XX.—CRANES.

By R. COSGRAVE.

The various accounts written of Cranes do not give much practical advice to the amateur who seeks help with regard to the management of these most satisfactory aviary birds.

In the first place, my advice is not to purchase a cripple at any price. See that the birds are sound and healthy, do not trouble if the plumage is rough, that comes all right at the first moult. Most dealers tell us that all Cranes must have fish; that is by no means necessary, as I have tried to show from time to time. When you get a fresh acquisition, by all means give it a little fish, but decrease the quantity daily for a week or two, finally dropping it altogether. Only in one case is it essential to give a little fish occasionally, namely, to the Asiatic or White Crane (*Grus leucogeranus*), for it is the most aquatic of all the family and an expert fisherman. Feed on good wheat, barley,

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\* The Game Birds and Water Fowl of South Africa, Part II., by Major BOYD HORSEBURGH, with coloured plates by Sergeant C. G. DAVIES, to be completed in four parts. London: WITHERBY & Co. 21/- net.

small round maize, barley meal (English), and, if £ s. d. permits, give bread cut up in small pieces, which can be swallowed easily ; do not give cheap corn, it is penny wise and pound foolish to do so. The natural times of feeding are in the early mornings and evenings, hence this is the best rule to follow with birds in confinement.

All Cranes, without exception, require a good grass run, the larger the better, and, where possible, they should be located near a lake, pond or stream so that the birds can wade or wash at pleasure ; to enjoy a wash or bath they like a good depth of clear water, from one to three feet, according to the size of the bird ; the Sarus and Manchurians like it still deeper. A natural bottom in all cases is most important ; concrete being much too hard as the birds spend a good deal of time wading about, and at night roost knee deep in water, no matter how cold and wet the weather may be.

With regard to housing in winter, one must be guided by local climatic conditions. Those that require protection in this locality, particularly at night, it may be as well to mention, viz., Cape Crowned Crane, West African Crowned Crane, Stanley Crane, Demoiselle Crane, Wattled Crane, and Sarus Crane ; these are driven in pairs into houses at night after the 1st of November each year, and are only allowed to remain out when the winter is well over. During the day we keep them in as little as possible, although the houses are good in every way. By careful housing during the winter you can keep the birds in good health and, as the nesting season comes along, you stand a much better chance of having nests with fertile eggs, a most necessary point to mention. Under no consideration, while the birds are indoors, place water or food on the ground, but put it into pans in a convenient light corner, where the birds can see them well, and raise them at least twelve inches from the ground, as by so doing the birds cannot foul them. Bed down with peat moss, and do not forget to have plenty of overhead ventilation, as well as that from the windows, and when hard frost and perhaps deep snow is on the ground admit as much sunshine as you can, and all will go well. Should it so happen that the snow lies more than two days, we sweep a good piece, say twelve yards



Photo by R. Cosgrave.

West, Newman proc.

CANADIAN AND WATTLED CRANES WITH  
HYBRID YOUNG.





by four yards or thereabouts in a sheltered corner, and this the birds make good use of if let out.

The period of incubation of Cranes varies. The species which have bred here are: Canadian, White-necked and Manchurian, and incubation takes 30 days; Wattled 36 days. A pair of Stanley Cranes at present have a nest here with the usual complement of two eggs; they have been sitting 32 days, and as we have no idea of the time these birds take to incubate, you can imagine our hopes and fears. Both male and female sit well and take turn on the eggs. All the Cranes' eggs that I have seen bear a strong family likeness and are small for the great size of the birds; the colour of the eggs varies slightly, and they are deposited with the same regularity, viz., one clear day between the first and second eggs. The nest is merely an apology, a few bents of grass or any rubbish handy is pulled together; sometimes this is not done until the first egg is laid. The Siberians take the most pains, and are not satisfied unless a considerable heap is got together, especially if they can get flags of any kind, which they pull up by the roots. Owing to their aquatic habits, the nest is built as near the water as possible, hence the idea of a large nest to keep well above the water-line.

Both species of Crowned Cranes have made nests this year, and we have daily expected to see an egg from the Cape Crowned (*Grus chrysopelargus*). These elegant creatures are a joy for ever, when seen, as they are here, in the very best of health and plumage; they are perfectly tame, and are pleased to welcome one and make friends at all times. The graceful way in which they dance about to amuse one is most entertaining; no matter how many people witness the performance, they appear to enjoy laughter; in fact, the more you laugh, the more they dance, bow, and skip about with half-open wings, showing all their wonderful variation of colours. They may be very highly recommended for any lawn or garden, being perfectly harmless, and they do not dig up the turf like most of the Cranes. The long life and hardiness of this family in confinement should appeal to all lovers of birds who can afford to keep them.

My humble remarks will, I hope, be of help to attain success, and are meant as such, not that I want to imply that my way is the best, I merely state the conditions that answer admirably here.

The call of the different species of Crane differs considerably, no two are alike; to describe them correctly requires the skill of an artist, and it would be a complete failure on my part, not knowing a note of music, to attempt it. The male and female are so much alike that, unless you know what sign to look for, it is a difficult matter to tell them. When the birds are calling or showing fight the pair usually stands together and the female holds her head quite upright, not a movement of her body takes place; on the other hand, the male stands likewise, but at each note he throws up both wings from behind, leaving his back and tail quite exposed: this goes on for a minute or two with automatic regularity. The fighting attitude of the Asiatic Crane is most amusing: he stands quite still, with his great bill hidden in his tail and end of wing-feathers, and when about to be attacked by anything, and the foolish being comes within striking distance, out comes the bill like a flash of lightning, and is used with terrible effect. This action puts one in mind of a man drawing his sword from its sheath in haste to defend himself.

The males of the Demoiselle and Crowned Cranes are not so easy to determine, one has to be guided by the action of the birds: they usually are slightly larger, and with well-defined lines of plumage and also the voice of the male is much deeper in tone and more prolonged.

During the migration period, in spring and autumn, all Cranes, without exception, get very excited in the hope of getting away, making determined attempts to get on the wing, in spite of being pinioned, especially if a strong wind is on. You will see them go down wind to the extreme end of the enclosure, then start to run and fly their hardest up wind, and very often clear the fence and land in another enclosure, when they are promptly attacked by the rightful owners. At these times the call is much more shrill, the Sarus can be heard several miles away down wind.

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The photographs of the Demoiselle Cranes, reproduced with this article, was kindly sent by Mr. J. C. PHILLIPS, of Knobfields, Wenham, Mass.

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